PROPOSED AMENDED RECORD OF DECISION

012797

SOUTH CAVALCADE STREET SUPERFUND SITE

October 17, 1996

143116

012798

PROPOSED AMENDED RECORD OF DECISION
SOUTH CAVALCADE STREET SUPERFUND SITE

1. **INTRODUCTION.** In 1988, EPA issued a Record of Decision (ROD) for the South Cava Street Superfund Site wnich selected soil flushing and soil washing as the remedies to remediate treating wastes in the soil. However, as also discussed below, following a soil washing pilot st became apparent to EPA that the selected remedy would not achieve the remedial action established in the ROD. Consequently, EPA decided to propose a change to the remedy at th through this ROD amendment to cover the contamination with a concrete cap.

012799

a. Site Name and Location. The South Cavalcade Street site was once the site of a f coal tar distillation and creosote wood preserving facility. The contaminants of concern in on-site are seven carcinogenic compounds[1] released from the creosote wood preservative prior to 1962, when wood treating operations ceased. The site is located in urban northeast Houston, Texas about one mile southwest of the intersection of Interstate Loop 610 and U.S. Route 59 (Figure 1 & 2). The boundaries of the 66 acre site are Cavalcade Street to the north, Collingsworth Street to the south, and the Houston Belt and Terminal (HB&T) lines to the east and west. The site is generally flat and is drained by two storm water drainage ditches flanking the east and west sides. These ditches discharge into Hunting Bayou, a Houston Ship channel tributary.

The site is presently used by three commercial freight truck companies: Trucking Properties, Nations Way, and Palletized Trucking which erected terminal, office and maintenance buildings on the northern and southern parts of the site. The central part of the site remains vegetated and vacant. Surrounding the site are commercial, industrial and some residential properties. The nearest residential area is directly to the west and across the HB&T railroad tracks; however, there are no residential properties adjacent to a site boundary. EPA anticipates the site will continue to be used as commercial freight truck terminals for the foreseeable future.

b. Lead and Support Agencies. EPA is the lead agency overseeing site remediation under the terms of a Consent Decree executed by Beazer East, Inc. ("BEI"), and entered by the U.S. District Court for the Southern District of Texas on March 14, 1991 (Civil Action No. H-90-2406). Under the Consent Decree terms, BEI is responsible for remediating the site in accordance with the remedy selected by EPA, as reflected by the ROD executed by EPA on September 16, 1988. A copy of the ROD is included in the Administrative Record as explained in the paragraph below. The Texas Natural Resource Conservation Commission (TNRCC) provides EPA remedial action support on the site.

c. Administrative Record. This ROD amendment will become part of the Administrative Record file in accordance with the National Contingency Plan (NCP), 40 CFR §300.825(a)(2). The Administrative Record contains documents such as the "Remedial Investigation/Feasibility Study" (RI/FS) and ROD, that form the basis for selecting the remedial action. In addition, documents attached to or referenced in this proposed Amended Record of Decision are incorporated into the Administrative Record by reference. The administrative record is located at:

U. S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 665-6444

Houston Central Library
500 McKinney
Houston, TX 77002
(713) 236-1313

The administrative record is available to the public at EPA Region 6 on Mondays through Fridays from 8 a.m. to 4 p.m. or the Houston Central Library on Mondays through Fridays from 9 a.m. to 9 p.m. except legal holidays.

d. Explanation of Difference. In lieu of using the soil washing and soil flushing remedies originally selected in the ROD, BEI proposes to seal areas where surface contamination exceeds the

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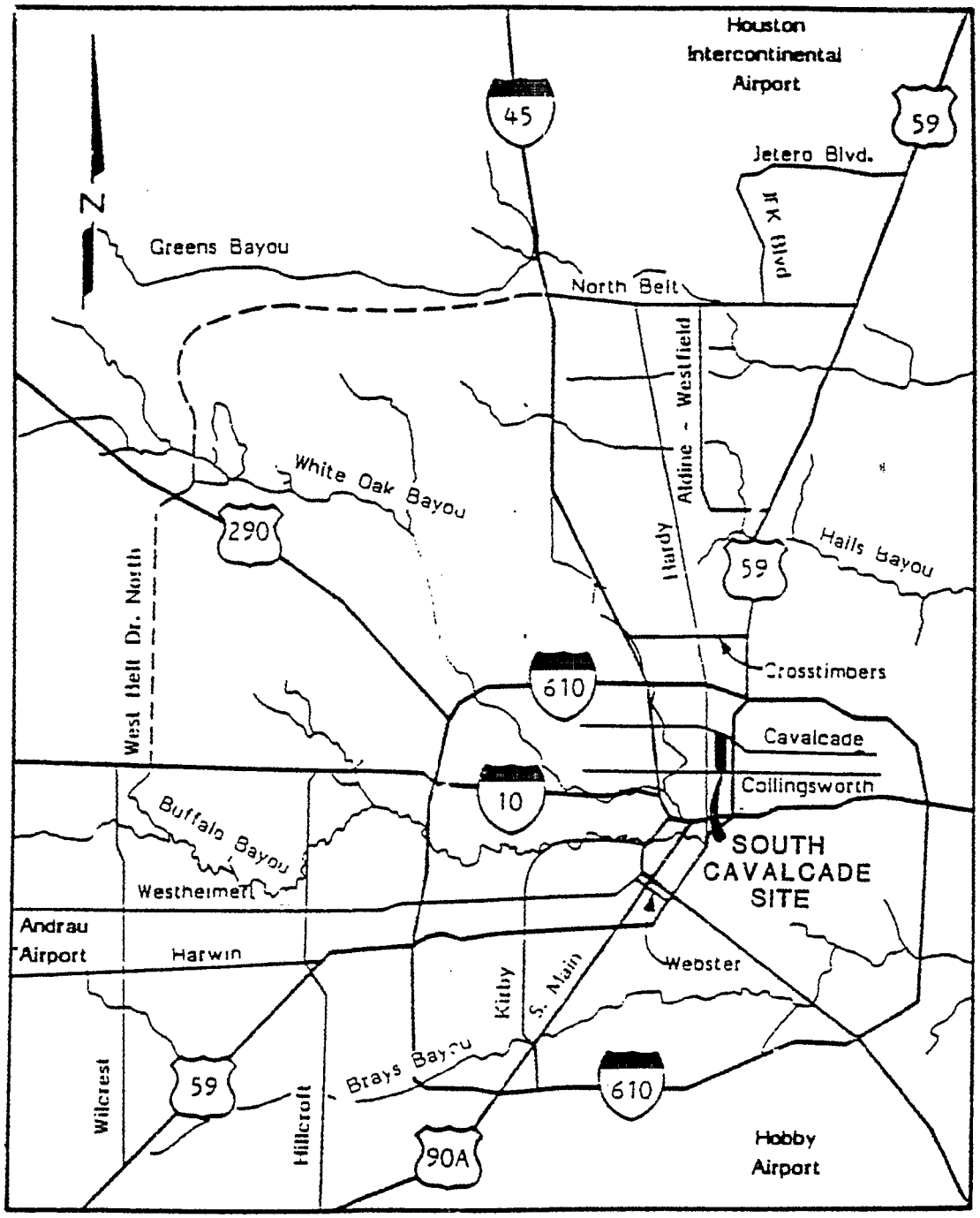
[1] The carcinogenic compounds are benzo(a)anthracene, benzo(a)pyrene. benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and ideno(1,2,3-cd)pyrene.



SCALE - MILES

0 4 8

SITE VICINITY MAP

FILE NO. 85-317
FIGURE 1

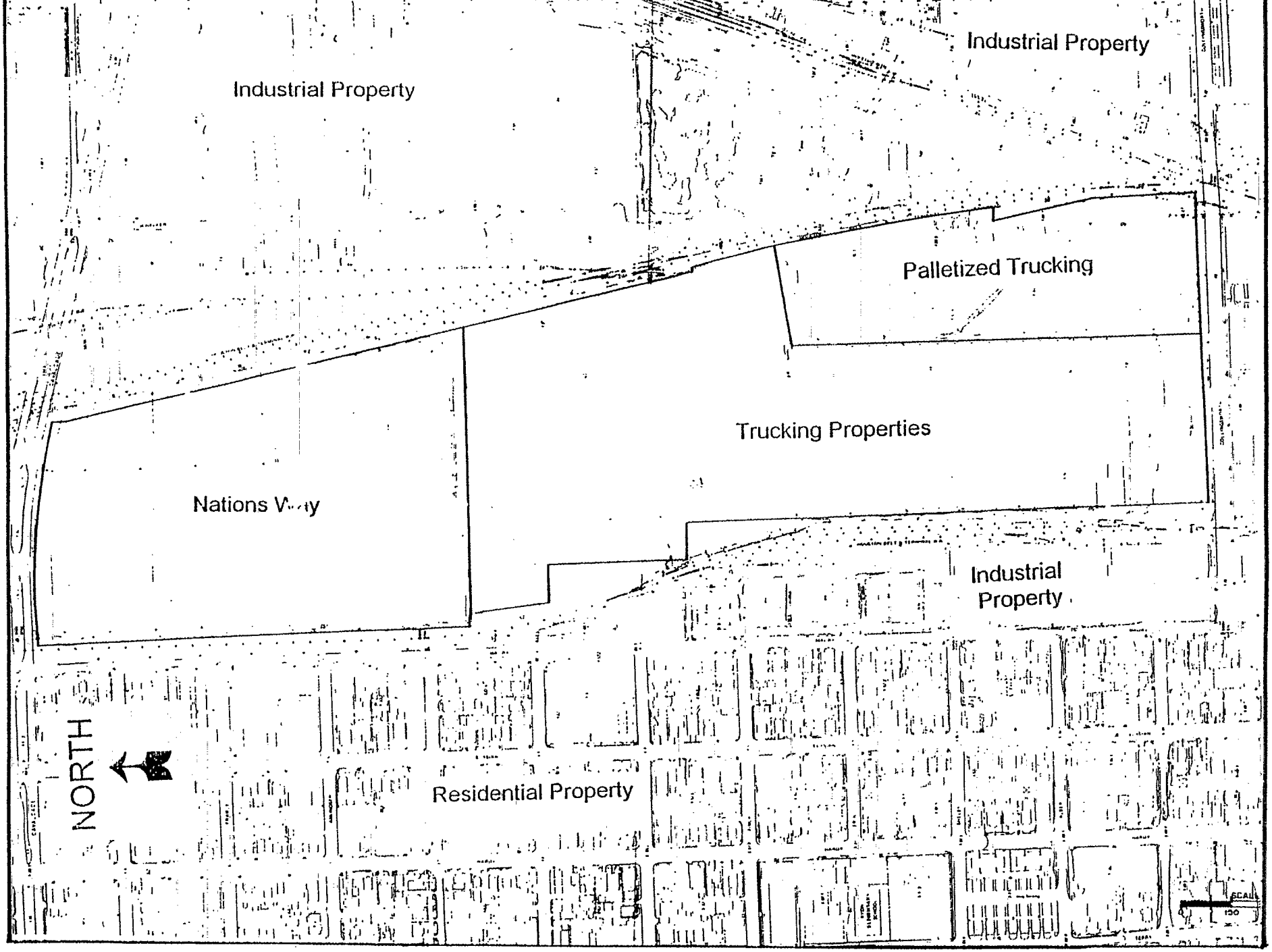


FIGURE 2

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ROD established soil cleanup goal - 700 ppm total carcinogenic polyaromatic hydrocarbons (cPA with a reinforced concrete cover. The ROD established 700 ppm as the soil cleanup goal to "... pre against an excess lifetime increased cancer risk of 8×10^{-6} for likely on-site exposure to soil."[3] Site is further discussed in this proposed amendment under the title "Summary of Rationale for Chan the Remedy Selected in the ROD." **This amendment affects only the soil remedial action whe on site groundwater remedial action remains unchanged.**

Since capping contamination changes the hazardous waste management approach originally established in the ROD, EPA considers this a "fundamental" change and must amend the ROD in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Section 117(c), 42 U.S.C. § 9617(c), and the 1990 National Contingency Plan (NCP) at 40 CFR § 300.435(c)(2)(ii). However, as explained in the following paragraphs, EPA believes this change will continue to protect human health within the acceptable risk range defined in the NCP at 40 CFR § 300.430(e)(2)(i)(A)(2).

e. Summary of the Circumstances Requiring an Amendment. The remedy originally selected for soil at this site was soil washing and soil flushing.[4] However, on September 25, 1992, EPA approved the August 1992, Keystone Environmental "Soil Delineation Report" which concluded that the estimated soil quantity requiring remediation was significantly less than the ROD estimate. As a result, the report concluded that it would be more efficient and cost effective to use one remediation technology rather than two.[5] EPA agreed with the soil delineation proposal and granted BEI approval to begin remedial design using only soil washing.[6]

In 1993, during the remedial design phase BEI conducted a soil washing pilot study; however, the study's results were inconclusive because forty percent of the soil volume could not be washed to meet the remedial goals. Thereafter BEI stated that it did not believe contamination beneath the surface posed a realistic health risk and petitioned EPA to reconsider the reasonableness of any risk posed by such contamination. After lengthy review and serious discussions with BEI, EPA decided that as long as the contamination remained below the surface it posed no unacceptable risk.[7] As a result on September 29, 1995, BEI proposed permanently covering the contaminated areas with a concrete cap in lieu of the originally selected remedies.[8]

2. REASONS FOR AMENDING THE ROD.

a. Soil Remedy selected in the ROD. As previously stated, the remedy selected in the ROD was flushing and washing approximately 30,000 cu. yd of a contaminated soil cross section from the surface down to a depth of six feet.[9] Through soil flushing, contaminated soil zones would have been remediated through a physical-chemical in situ soil flushing process which would have continually passed an aqueous solution, containing surfactants or other chemicals, through contaminated areas

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[2] "Record of Decision." South Cavalcade Street Site," USEPA. September 16, 1988. p. 15. (See Administrative Record)

[3] ROD, p. 32.

[4] ROD, p. 30.

[5] "Soil Delineation Report," Keystone Environmental Resources, Inc., pp 4-1 to 4-6, August 1992. (See Administrative Record)

[6] USEPA letters to Beazer East, September 2, 1992 and September 25, 1992. (See Appendix A)

[7] USEPA letter to Beazer East, September 7, 1995 (See Appendix A)

[8] Beazer East letter to USEPA, September 29, 1995 (See Appendix A)

[9] ROD, p. 18.

to release the contaminants. As the released contaminants moved out of the contaminated zone would have been captured and treated by collection and treatment systems. The contaminants w have in effect been flushed out of the contaminated zone.

Through soil washing, excavated soils would have been removed to an on-site washing fa which would have washed the contaminants from the soil into a wash water which would have l treated with screens, centrifuges, flocculators and clarifiers to remove the contaminants. The tre water would have been recycled for additional soil washing use.

b. Summary of Rationale for changing remedy selected in the ROD. As described in a previous section titled "Summary of the Circumstances Requiring an Amendment," EPA reconsidered the soil flushing remedy and proposes to abandon it after concluding that estimated soil quantity requiring remediation was significantly less than originally estimated. Therefore, it would be more efficient and cost effective to use one remediation technology rather than two. In 1993, during the design effort BEI conducted a soil washing pilot study; however, the study's results were inconclusive since the pilot test demonstrated that forty percent of the soil volume could not be washed to meet the remedial goal. Consequently, the final volume and disposal of soil that would remain contaminated was uncertain. These pilot study findings presented new information that fundamentally changed the performance and cost of the selected remedy. Therefore in accordance with the NCP 40 CFR § 300.435, EPA proposes amending this ROD. When evaluating the BEI proposal to contain the wastes at the site, EPA considered the May 25, 1995, *Land Use in The CERCLA Remedy Selection Process* (OSWER Directive 9355.7-04). As described in the NCP 40 CFR § 300.430.(a)(1)(iii)(A), EPA prefers permanent solutions to reduce the toxicity, mobility, or volume of the wastes and the treatment of all principal threats. However, in 1991, three years after the ROD was signed, EPA published guidance defining "principal threat."[10] In accordance with that guidance, EPA does not consider the contamination on site to be a principle threat since the base line risk assessment did not identify any health risk from any of the soil contaminants on site greater than 1 in 1000 ($1x10^{-3}$).[11] Therefore, since the waste on site is not considered a principal threat the NCP 40 CFR § 300.430.(a)(1)(iii)(B) now allows EPA to use "... engineering controls, such as containment, for waste that poses a relatively long term threat."[12] EPA believes BEI's proposed concrete cover will provide reliable protection.

As a result of the PRPs proposal, EPA re-evaluated the reasonably anticipated land use and the potential exposure pathways for the designated land use from the original Record of Decision. Using the aforementioned land use directive EPA developed future land use assumptions with information such as population growth patterns, accessability to the site, institutional controls in place and site location.[13] This evaluation lead EPA to conclude that the current land use, freight truck terminals, will continue to be the land use for the foreseeable future and will remain nothing other than industrial use because of population growth patterns, accessability to the site, institutional controls and its location. In addition, EPA will accept comments regarding its assumption during the public comment period.

This is a change from EPA's original land use assumptions. At the time that the site was under investigation, inadvertent ingestion, dust inhalation, and direct contact by utility or construction workers were likely exposure assumptions. However, as a result of an Administrative Order on Consent, entered in 1992, each landowner has placed a deed notice on file to alert future landowners that contamination

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[10] "A Guide to Principal Threat and Low Level Threat Wastes," USEPA, p.2, November 1991.

[11] "Feasibility Study," Keystone Environmental Resources, Inc., p. 2-28a, August 1988. (Administrative Record)

[12] National Contingency Plan (NCP) 40 CFR § 300.430.(a)(1)(iii)(B).

[13] "Land Use in the CERCLA Remedy Selection Process," USEPA, Office of Solid Waste and Emergency Response (OSWER) Directive No. 9355.7-04, p. 5.

remains on site.[14] The order also prevents landowners from drilling water wells on site; requires landowners to preserve, protect, repair and maintain existing concrete foundations and paved areas; and provides notice that residential use of the site is inappropriate. Consequently, this pathway is no longer realistic because future owners are forewarned and can take measures to protect utility or construction workers from inadvertent ingestion, dust inhalation and direct contact with contaminants on the site.

EXPOSURE PATHWAYS

- Inadvertent ingestion, dust inhalation, and direct contact with surficial soils by utility or construction workers;
- Inadvertent ingestion and direct contact with drainage ditch sediments by Trespassing children; and
- Inadvertent ingestion and direct contact with surface soils by future residents if the site were ever developed.
- Inadvertent ingestion and direct contact with surface soils by on-site commercial occupants

Table 1 Four Exposure Pathways Assumptions.

Although inadvertent ingestion and direct contact with drainage ditch sediments by trespassing children was considered a potential exposure according to the remedial investigation studies, this exposure had a maximum noncarcinogenic hazard index of less than 0.01 and a maximum excess lifetime cancer risk of 1×10^{-6}. The risk estimate for this exposure pathway is within the acceptable range defined in the NCP, 40 CFR § 300.430(e)(2)(i)(A)(2).[15] Therefore, this is no longer a realistic pathway.

In addition, since the site is a potential brownfield bordered by two railroads, above ground petroleum product storage tanks, warehouses and other light industries, future residential development is unlikely. Therefore, inadvertent ingestion and direct contact with surface soils by future residents is also unlikely. Furthermore, as previously mentioned, the notice recorded pursuant to the AOC states that residential land use is inappropriate. Therefore, this is no longer a realistic pathway.

The fourth exposure pathway, "inadvertent ingestion and direct contact with surface soils by on-site commercial occupants"[16] is the most realistic and probable exposure pathway. However, this pathway can be severed with a concrete cap covering all known contaminated areas, effectively severing the contaminant exposure pathway for on-site commercial occupants. Consequently, EPA believes that a concrete cap will be protective of human health and the environment, and as long as the cap remains in place the risk will remain less than 1×10^{-6} because there will not be an exposure pathway.

EPA does not anticipate population growth within the area because this area of Houston is "built out" indicating that population growth has mostly peaked. Access from two major freeways, IH 610, and U.S. 59 make the site ideal for continued trucking terminal operations. Furthermore, an administrative order on consent provides an institutional control to discourage residential land use.

Lastly, the site's location within an existing industrial corridor, bordered by railroad tracks and next door to a fuel distributor as well as a meat rendering plant, most likely will ensure the site will remain industrial. Consequently, EPA concluded that unrestricted site use is not probable and since there is no principal threat on site, EPA no longer believes treatment is appropriate because it can not cost effectively achieve EPA's remediation goals. Therefore, EPA proposes this amendment because it believes the BEI arguments for covering the contaminated areas with a concrete cap have merit.[17]

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[14] Administrative Order on Consent, Docket Number 6-08-92, June 9, 1992. (See Appendix C)

[15] "ROD, p. 15.

[16] ROD, p. 14.

[17] BEI letter, Sept 29, 1995 and EPA letter, Oct 5, 1996 (See Appendix A)

To summarize the reasons for amending the ROD, the soil washing pilot study design indicated that the original remedy was unsatisfactory because forty percent of the soil volume could not be washed to meet remediation goals specified in the ROD. Instead, BEI proposed permanently covering contaminated areas with a concrete cap. EPA evaluated the land use and concluded that, given the current and most reasonably anticipated land use, the concrete cap could adequately protect human health and the environment by severing exposure pathways.

DESCRIPTION OF THE NEW ALTERNATIVE. The concrete cap BEI is proposing will seal and contain contaminated soils beneath at least six inches of steel reinforced concrete designed to withstand the current and anticipated freight truck traffic. BEI will design the cap in accordance with the design practice specified by American Concrete Institute Code 330, "Guide for Design and Construction of Concrete Parking Lots". The cap will be designed to provide positive drainage to eliminate standing rainwater and will cover all presently known contaminated surface soils. Site drawings showing the areas BEI will cover with the cap are included as Appendix B. Although the concrete cap will not treat contaminated soil it will provide a barrier preventing on site commercial occupants from inadvertently ingesting, inhaling or directly contacting contaminated soils.

- Chemical Specific. Those requirements which establish the acceptable amount or concentration of a chemical that may be found in, or discharged to the ambient environment
- Location Specific. Those requirements which restrict the concentration of hazardous substances or the conduct of activities solely because of the site's location, i.e. floodplain, wetlands, historic places and sensitive habitats.
- Action Specific. Those technology or activity based requirements on actions taken with respect to hazardous wastes. These requirements indicate how a selected remedial action must be achieved. requirements."

Table 2. ARAR Categories.

40 CFR, Part 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

- Subpart G - Closure and Post Closure, §264.310(a) & (b), §264.117, §264.118 and §264.119(b)(1)(iii).
- Subpart N - Landfills, §264.301(b), §264.310(a) and §264.310(b).
- Subpart W - Drip Pan, §264.575(c)(1)(ii).

Table 3. Relevant and Appropriate Requirements.

3. **MAJOR ARAR'S.** CERCLA, Section 121(d)(2) requires remedial actions to at least attain ARAR's, 42 U.S.C. § 9621(d)(2). Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance at a Superfund site. Relevant and appropriate requirements are standards, which while not "applicable" at a CERCLA site, address problems or situations sufficiently similar to those encountered at the site that their use is warranted. EPA recognizes the three ARAR categories defined in Table 2. While EPA does not believe there are any requirements applicable to this site, the requirements in Table 3 are relevant and appropriate.

4. **EVALUATION OF ALTERNATIVES.** To properly propose a ROD amendment EPA traditionally evaluated the originally selected remedy and the amended remedy by comparing th against the nine criteria identified in Table 4 to ensure that the amended remedy reflects the scope, purpose and a long term comprehensive response for the site after discovering significant new information to support the change.[18] In addition, EPA also considered the presumptive remedy for a wood treating site.

- Overall Protection of Human Health and the Environment
- Compliance With Applicable or Relevant and Appropriate Requirements
- Long-Term Effectiveness and Performance
- Reduction of Toxicity, Mobility or Volume Through Treatment
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance
- Community Acceptance

Table 4. The Nine Criteria.

a. Overall Protection of Human Health and the Environment. The concrete cap will adequately protect human health and the environment by severing the potential exposure pathways:

- inadvertent ingestion, dust inhalation, and direct contact with surficial soils by utility or construction workers;
- inadvertent ingestion and direct contact with drainage ditch sediments by trespassing children;
- inadvertent ingestion and direct contact with surface soils by future residents if the site were ever developed; and
- inadvertent ingestion and direct contact with surface soils by on-site commercial occupants.

Consequently, as long as the land use remains similar to the present use and the concrete cap remains in place, the amended remedy will be protective, cost effective and efficient. Since the soil washing remedy did not meet remediation goals as described above, capping provides greater overall protection than the remedy selected in the ROD.

b. Compliance With Applicable or Relevant and Appropriate Requirements. It is possible to construct a concrete cap which will meet the requirements of the ARAR's identified above which require the remedy to minimize the need for further maintenance and control post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.[19] The previous remedy, soil washing, will not meet the ARAR's.

c. Long-Term Effectiveness and Permanence. Since the originally selected remedy could not treat the soils to meet the remedial goal, it failed to demonstrate the long term effectiveness anticipated in the 1988 ROD. However, a concrete cap can be designed to provide adequate long term protection. Concrete's performance is well documented and with minimal maintenance EPA expects that a concrete cap can provide a durable barrier protecting the environment indefinitely with minimal long term operation and maintenance requirements.

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[18] NCP, 40 CFR §300.430(f), "Selection of Remedy."

[19] 40 CFR, Part 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities: Subpart G - Closure and Post Closure, § 264.111(a) & (b)

d. Reduction of Toxicity, Mobility or Volume Through Treatment. While EPA recognizes criteria applies only to treatment a concrete cap will reduce toxicity by severing the most likely pote exposure pathway. In addition, since water is the only medium most likely to mobilize the contamir a concrete cap will greatly reduce the amount of water contacting the contaminant. Although the rem does not provide soil treatment since EPA believes that the current land use, freight truck terminals, continue to be the land use for the foreseeable future, treatment provides no apparent additional ber

e. Short-Term Effectiveness. When compared to the originally selected remedy, the amended remedy will provide equal or better short-term effectiveness. With either remedy there is, albeit small, a probability that remedial action workers could receive a harmful exposure from fugitive dust generated during construction. However, this potential threat will be minimized by implementing appropriate worker health and safety procedures. Constructing the originally selected remedy was expected to take up to five years, whereas constructing a concrete cap is expected to take less than one year.

f. Implementability. In comparison to the originally selected remedy, the concrete cap is implementable whereas soil washing is not implementable. Although the feasibility study indicated soil washing was implementable, the full scale pilot test demonstrated that soil washing could not consistently and efficiently meet remediation goals. The amended remedy is implementable since it is easy to construct with readily available skills and materials, and is reliable and is easy to maintain.

g. Cost. When comparing present worth costs, constructing a concrete cap will cost approximately $697,000 whereas the soil washing is currently estimated to cost in excess of $6,800,000. There will be no operation costs associated with the concrete cap. Since the cap will serve as truck terminal pavement, the fact that the cap covers contaminated soil will not add to the pavement maintenance normally required for terminal operations. Therefore operation and maintenance are not considered in the cost of this concrete cap.

The originally selected remedy did little to control clean up cost. As demonstrated during the soil washing pilot project, successful treatment was uncertain because the final volume and disposal of remaining contaminated soil could not be estimated with any acceptable certainty. Uncertainty increases the financial risk for contractors bidding the remedial work, and greater financial risks will increase the bid price. By eliminating the uncertainty of treatment success, the financial risk is reduced and costs are kept under control.

h. State Acceptance. The Texas Natural Resource Conservation Commission (TNRCC) reviewed this amendment. The TNRCC has not opposed the amendment.

i. Community Acceptance. The community has been satisfied with the work to date and the current landowners have accepted the proposed remedy (See Appendix A, letter dated October 20, 1995 and January 8, 1996). Furthermore, the site is a potential "brownfield."[20] Therefore EPA believes a concrete cap covering contaminated areas will reduce the originally estimated five year[21] cleanup duration to less than one year. This would allow property owners to quickly expand current terminal operations thus increasing the local tax base and stimulating job growth while providing a protective remedy. Consequently, a cap will encourage economic development by returning the property to its full potential.

EPA will accept comments for thirty days after the proposed plan is published. Significant comments with EPA responses will be summarized and published with the final plan. In addition to a comment period, EPA will hold a Public Meeting during the comment period to discuss the proposed alternative. EPA's response to any comments received during the meeting will also be included with the final plan.

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[20] A brownfield is an abandoned, idled or under-used industrial and commercial facility where expansion or redevelopment is complicated by real or perceived environmental contamination.

[21] ROD, p. 20.

6. **STATUTORY DETERMINATION.** Under its legal authorities, EPA's primary responsibilit Superfund sites is to undertake remedial actions that achieve adequate protection of human health the environment. In addition, Section 121 of CERCLA establishes several other statutory requirem and preferences that the selected remedy must meet. Section 121 of CERCLA specifies that w complete, the selected remedial action for this site must comply with ARARs established under Fed and State environmental laws unless a statutory waiver is justified. The selected remedy also mus cost effective and utilize permanent solution and alternative treatment technologies or resource reco technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. As described in the previous sections the selected remedy meets these statutory requirements because there is no principal threat on site and the concrete cap will sever the exposure pathway thus protecting human health and the environment.

012809

APPENDIX A - CORRESPONDENCE

012810

September 2, 1992

Shannon Craig
Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, Pennsylvania

RE: South Cavalcade Site

Dear Shannon:

Reference the August 1992 "Soil Delineation Report" Keystone Environmental Resources Inc. transmitted to our office on August 3, 1992. We will approve this report if Beazer East Inc. (BEI) makes the report revisions described in the following paragraphs. Rather than producing another report binder we will accept these revisions as an addendum to be filed with the report. Please ensure each item in the addendum states the page and paragraph requiring a change. Please provide our office with the addendum no later than September 23, 1992.

REPORT REVISIONS

Reference page 3-4 and 3-5, "Northwestern Area." The report does not describe the "concern." Request you revise the report to describe the "concern" by stating aerial photographs show a pond in the northwest quadrant from about 1957 to 1969. However, aerial photographs after 1969 no longer show the pond. EPA requested BEI to compare the pond's location to soil sampling locations G-38, G-39, G-40 and G-41. EPA wanted to ensure that if the pond had ever been used as a waste pit that the soil samples were in fact collected from the former pond site thus confirming the presence or absence of soil contamination. Note the paragraph could lead a reader to believe the aerial photographs show staining, and that was not the case.

Reference figure 3-1, "Southeastern Area Soil Sampling Locations." The drawing legend does not define the crosshatched areas. Please revise the legend to define the crosshatched areas.

Reference page 4-2, the first paragraph. EPA did not request BEI to conduct additional sampling of "clean" soils. EPA and BEI disagreed upon the number of samples used to define a soil as clean. EPA never agreed the samples were previously characterized as "clean" as the paragraph implies; this was BEI's characterization. EPA does not believe these soils were properly characterized as either "clean" or dirty. Per our agreement with BEI, BEI will conduct further testing. Revise the report to first describe the disagreement between EPA and BEI and then describe the agreement EPA and BEI reached to resolve the disagreement.

Reference page 4-2. The report does not describe the location of the soils in question. Revise the report to state that EPA and BEI disagreed with the interpretation of soil test results that indicated a clean 0 - 2' soil layer overlying soil in which

contamination exceeded the remedial action level because EPA and BEI could not agree upon why the contamination was not present in the 0 - 2' layer but present in underlying layers.

Reference page 4-3. We do not believe the report clearly states that sample average and field standard deviation for each pile will determine the required remedial action for each pile. Please revise the report to state that BEI will average the 7 cPAH concentrations from each soil pile. If the average cPAH concentration is below the remedial action level and if the field standard deviation is equal to or less than the standard deviation originally used to determine the number of samples collected, BEI will consider the average soil pile concentration is below the remedial action level. However, if the average of the 7 cPAH concentrations from each pile is above the remedial action level and the field standard deviation is equal to or less than that originally used to calculate the number of sample collected, BEI will consider the average soil pile concentration above the remedial action level and BEI will wash the entire soil pile. In either case if field standard deviation is greater than that originally used to calculate the number of samples required, BEI will recalculate the number of samples using the field standard deviation. BEI will continue sampling until a field sample standard deviation correlates with the number of samples collected. Once no additional samples are required, BEI can assume the sample average is the average soil pile concentration and use the average to determine if the pile requires remedial action.

If you have any questions pleas call me at (214) 655-8523.

Sincerely,

Glenn Celerier, P. E.,
Project Manager

cc: Mr. Mark McDonnell, Flour Daniel Inc.
Mr. Steve Chong, Texas Water Commission

012811

012812

September 25, 1992

Ms. Shannon Craig
Project Coordinator
Beazer East, Inc.
436 Ceventh Avenue
Pittsburgh, PA 15219

RE: South Cavalcade Superfund Site, Cooperative Agreement Schedule

Dear Shannon:

Reference Beazer letter dated September 22, 1992. We accept the Beazer East "Soil Delineation Report" addendum you submitted on September 22, 1992.

Sincerely,

Glenn Celerier, P.E.
Project Coordinator

cc: Mark McDonnell, Flour Daniel, Inc.
Steve Chong, Texas Water Commission

012813

SEP 07 1995

Steve Radel
Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1822

Dear Mr. Radel:

This letter is in response to Beazer's August 18, 1995, letter and the August 28, 1995, meeting between EPA and Beazer. As discussed in the August 8, 1995, EPA letter to Beazer, the consent decree executed by Beazer on or about June 11, 1990, gives EPA the authority to pursue further investigation to ensure that human health is protected from an actual release of a hazardous substance (CD p. 2). Current site conditions give EPA reason to believe that there may be additional contamination deeper than shown in the August 1992 soil delineation study. However, if there is little chance that humans will actually be exposed to contaminated soils deeper than two feet below the ground surface, EPA is willing to reconsider the risk those deeper contaminated soils pose to human health.

Although EPA is willing to reconsider the risk posed by potentially contaminated soils deeper than two feet, in the Consent Decree, Appendix I, Statement of Work, EPA represented to the public and current landowners that contaminated soil would be remediated to a maximum depth of six feet; therefore, the EPA must notify the public that it may not continue remedial action below two feet. Consequently, EPA intends to notify the public of its decision to cease excavation at two feet rather than at six.

EPA will consider public comments when it determines if there are unforeseen risks to human health from any contamination deeper than two feet. If, after reviewing any public comments, EPA determines that there is minimal risk to human health posed by contamination two feet deep, EPA will instruct Beazer to commence excavation.

Lastly, since EPA is considering changes to the remedial action it agrees to suspend the current construction schedule until it determines if there is any need to further pursue investigating soil contamination below two feet.

If you have any questions please call me at (214) 665-8523.

Sincerely,

Glenn Calerier, P.E.
Project Manager

cc: Trey Collins, TNRCC
Mark McDonnell, Fluor Daniel, Inc.
Mike King, Palletized Trucking
Robert Sternenberg, Trucking Properties
Calvin Reeves, Baptist Foundation of Texas
Ursula Lennox (6SF-LL)

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

012815

September 29, 1995

VIA AIRBORNE EXPRESS

Mr. Glenn Celerier, P.E.
EPA Project Coordinator (6SF-AT)
Superfund Programs Branch
U.S. Environmental Protection Agency, Region VI
Allied Bank Tower @ Fountain Place
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Contemplated Soil Remedial Action Revision
South Cavalcade CERCLA Site
Houston, Texas

Dear Glenn:

This letter has been prepared in response to the United State's Environmental Protection Agency's (EPA) letter of September 7, 1995 regarding EPA's contemplated revision to the soil remedy at the South Cavalcade CERCLA Site (Site) located in Houston, Texas. Specifically, EPA states in the subject letter that "if there is little chance that humans will actually be exposed to contaminated soils deeper than two feet below the ground surface, EPA is willing to reconsider the risk those deeper contaminated soils pose to human health." Further, EPA "intends to notify the public of its decision to cease excavation at two feet rather than at six" in order to inform the public of changes in the soil remedy and allow public comment. If EPA determines after a review of public comments "that there is minimal risk to human health posed by contamination two feet deep, EPA will instruct Beazer to commence excavation."

Beazer agrees with the EPA that soils at or near the ground surface represent the greatest potential exposure pathway to on-site commercial workers. Therefore, EPA's above referenced recommendation will mitigate the potential risk of exposure to these surface soils. However, Beazer believes that an alternate approach will effectively mitigate this potential risk of exposure as well or better than EPA's recommended alternative. This approach consists of a concrete cover over the identified areas of concern. The concrete cap will in fact be more protective than EPA's alternative because a permanent, impermeable barrier will be constructed in the designated areas of concern. This approach is also consistent with EPA's determination that the existing pavement and buildings effectively mitigate potential exposure to soils beneath these barriers. The following constitutes a

summary of the primary issues which support Beazer's recommendation to install a concrete cover in the designated areas of concern.

Beazer believes that surface soils, defined in the ROD as the "upper six inches of soil," constitute the primary risk to human health, not all soils within the two foot depth as stated in EPA's September 7, 1995 letter. The Final Public Health and Environmental Assessment ("Risk Assessment", August, 1988) identified the primary soil exposure pathways for the Site as dermal contact and inadvertent ingestion for on-site commercial occupants and utility workers (see below). It is unlikely that on-site commercial occupants will ever be exposed to COCs below six inches in depth via the principal exposure pathways of direct contact with soils and ingestion. On-site commercial activities include primarily tractor/trailer rig storage, loading and unloading. Therefore, on-site occupants would not be exposed to soils below six inches in depth during normal day-to-day activities. Only invasive activities at the Site related to the installation of structures and supporting underground utilities would potentially expose on-site construction workers to impacted soils below six inches in depth. Accordingly, Beazer believes that the primary risks to on-site commercial occupants and construction workers is limited to the upper six inches of soil. Excavating an additional eighteen inches to the two foot level provides no additional reduction in risk yet adds significant increase in cost.

The principal exposure pathways and human receptors were identified in the Risk Assessment and summarized in the ROD. The mitigation of human health risks via the identified exposure pathways for EPA's contemplated soil remedial alternative and Beazer's proposed concrete capping remedy is summarized below. For each exposure pathway, Beazer's proposed alternative, concrete capping, is equally or more protective than EPA's contemplated alternative.

- **Inadvertent ingestion and direct contact with surface soils by on-site commercial occupants.** The risks associated with impacted surface soils to on-site commercial occupants is primarily related to contact with airborne dust or with surface soils impacted with potentially carcinogenic polynuclear aromatic hydrocarbons (pcPAHs) and ingestion of these constituents. EPA's proposed remedy eliminates direct contact with soil to a depth of two feet. However, the Risk Assessment did not foresee any risk via this exposure pathway for soils deeper than six inches. Beazer's proposed concrete cap remedy removes any risk associated with this exposure pathway by providing a physical barrier to human contact.

- **Inadvertent ingestion and direct contact with drainage ditch sediments by trespassing children.** The primary transport mechanism for migration of soils impacted with pcPAHs is sediment in stormwater runoff. Through excavation and treatment of soil to two feet, EPA's contemplated alternative remedy would eliminate the migration of any impacted surface soils in stormwater sediments. However, soils below six inches in depth are not susceptible to stormwater runoff. Beazer's proposed

concrete cap eliminates stormwater contact with surface soils thus eliminating the transport mechanism and associated risks for this exposure pathway.

- **Inadvertent ingestion, dust inhalation, and direct contact with surficial soils by utility or construction workers.** The Risk Assessment addresses risks associated with future construction worker invasive activities such as new construction and associated utility installation which may expose workers to surficial soils impacted with pcPAHs. By providing a robust barrier which must be broken prior to any invasive work, Beazer's proposed concrete cap remedy is more protective of human health via this exposure pathway than EPA's proposed two foot excavation remedy. Both proposed remedies also rely on using institutional controls, as referenced in the ROD and recommended in EPA's Land Use Directive (OSWER Directive No. 9355.7-04; Land Use in the CERCLA Remedy Selection Process), to control these risks.

  The ROD already provides for institutional controls to minimize the potential exposure to Site construction workers. EPA requires that "site owners add a notice to their deeds expressing that hazardous substances are located under concrete and buildings. EPA will require this to notify any potential purchaser of the Site about this contamination" (Page A-7 of the ROD). This notice can be modified to include areas of the Site that Beazer proposes to cap. The ROD and the Consent Decree further require that landowners provide notification to EPA of any proposed development in any area containing impacted soil. Further, access agreements are in-place between Beazer and all the Site landowners, and this agreement requires landowners to notify Beazer of any development at the Site which may involve invasive activities in impacted areas of the Site.

- **Inadvertent ingestion and direct contact with surface soils by future residents if the site is ever developed.** As stated in the Land Use Directive, EPA expects that the vast majority of Superfund sites will continue to be used as industrial sites. Future residential use at the South Cavalcade Site is highly unlikely. All three parcels of land at the Site are being used for trucking operations and it is expected that this type of land use will continue. In fact, NW Nations Way Transport Service, Inc. recently purchased the Site's northern tract from the Baptist Foundation of Texas with plans to expand the trucking terminal. Additionally, industrial sites surround nearly the entire 64-acre South Cavalcade Site, and active railroad tracks border both the east and west boundaries, making it extremely unlikely a tract of land such as this will ever be developed for residential use. Deed restrictions can be obtained from the land owners which will allow only future industrial/commercial utilization of the Site. Both Beazer's proposed capping and EPA's proposed two foot excavation soil remedies properly assume continued commercial/ industrial use of the Site, acknowledging the insignificantly small risk associated with this exposure pathway.

- **Ingestion of groundwater if contamination continues to migrate or if water supply wells are ever installed on-site.** Beazer has shown in extensive testing and analysis of

soil leaching potential that the COCs in the Site soils do not leach. To support the absence of risk to groundwater presented by leaving impacted soils in-place, over 250 soil samples have been collected and analyzed using TCLP to determine any leaching potential for soils impacted with pcPAHs. None of the more than 250 samples analyzed have shown leaching potential. Thus, there exists no risk of impact to groundwater associated with leaving any impacted soil in-place at the Site. The Site constituents simply do not leach from soil and this risk exposure pathway is a non-issue for impacted soil.

Further, the Site and surrounding areas are provided city water and water supply wells are not required or desirable.

Beazer's proposed concrete cap remedy provides even further assurance that this exposure pathway is a non-issue for impacted soil at the site by providing an impermeable barrier to rainfall infiltration. By removing the transport mechanism, the concrete cap eliminates all arguable risks, if any, that could be associated with this exposure pathway.

Beazer's proposed concrete cap would provide many benefits beyond those provided by EPA's proposed two foot excavation remedy. They include: consistency with the ROD-selected soil remedy for existing paved areas of the Site, reduction of the time frame for implementation of the soil remedy, elimination of potential exposure to construction workers during implementation of the soil remedy, and allowance of minimum disruption to ongoing trucking operations while more promptly providing beneficial land use to the community in full compliance with EPA's Land Use Directive. Each of these additional benefits are discussed below.

- **Establish a consistent soil remedy throughout the Site.** In the ROD, approximately 60% of potentially impacted soils were noted to be present beneath existing concrete and buildings in the southeast portion of the Site based on data collected during the RI. Per the ROD, these areas do not require remediation because the risks of dermal contact or inadvertent ingestion are mitigated by the barrier (the buildings and paving) between occupants and the impacted soil. Likewise, placing Beazer's proposed concrete cap over the remaining impacted areas provides the same mitigation of risk to on-site occupants.

- **Eliminate potential exposure to construction workers during soil remedy implementation.** The EPA's proposed revision to this remedy will require excavation, handling, hauling and processing of impacted soils; stormwater run-on and runoff control and treatment; and residual materials handling and disposal. In addition, residual materials may require off-site disposal at an approved TSD facility, and there are additional risks of human exposure during loading, transportation, off-loading, disposal and decontamination activities.

Beazer's proposed cap will practically eliminate these risks. Nearly all areas of the proposed cap will be designed for installation at or above the existing exposed ground surface, therefore, invasive activities will be limited. Dust control measures will be implemented to ensure a minimal amount of worker exposure during construction of the concrete cap.

- **Reduce the time frame for soil remedy completion and provide beneficial land use for the community.** The cap remedy is consistent with the ROD and EPA's Land Use Directive in providing a preference for continued beneficial use of the property. Implementation of the current remedy and EPA's revision of this remedy will require a one to two acre Site area for the construction and operation of the EPA approved bioremediation cells. Bioremediation of impacted Site soils pursuant to EPA's proposed two foot excavation remedy may take up to five years to complete. During this time frame, the one to two acre bioremediation cell area will be unusable. Capping of the impacted soil areas pursuant to Beazer's proposed remedy will require only months to complete thereby greatly reducing remedial operations related exposure risk and promptly placing the Site back into a productive and beneficial commercial/industrial use.

  Beazer's proposed concrete cap has the additional benefit of providing a structure which enhances the use of the Site for trucking operations. EPA's Land Use Directive considers land use in making remedy selections under CERCLA and can be applied to remedy modifications as well. EPA acknowledges in this guidance the importance of continued land use in remedy selection. As stated on Page 1 of the Land Use Directive, "EPA acknowledges the importance of land use in determining cleanup levels and remedies... and expects that the vast majority of sites with current industrial/commercial uses (70% of all Superfund sites) will continue to be used as commercial or industrial sites...". Beazer's proposed concrete cap remedy provides beneficial continued commercial/industrial utilization of the Site to the maximum extent possible while minimizing risks to human health and the environment.

In conclusion, Beazer supports EPA in its effort to effectively mitigate risks at the Site and to minimize the time frame required for soil remediation. While EPA's proposed two foot excavation soil remedy effectively addresses all contemplated risks to Site occupants and construction workers, Beazer's proposed capping remedy provides equal or improved risk reduction and the additional benefits associated with a more prompt, efficient, and consistent remedy as described above. The ROD already acknowledges the equal to or improved risk reduction provided by concrete capping through its allowance for leaving impacted soils in-place at the Site under existing concrete and buildings. Further, legally binding documentation in the form of deed restrictions, as referenced in the ROD, access agreements, the ROD, and the Consent Decree require that land owners provide notification to EPA and Beazer of any invasive activities that may conceivably disrupt the integrity of such a cap. Finally, Beazer has already implemented an extensive groundwater remediation and monitoring program at the Site and will closely monitor the progress of

groundwater remediation at the Site to ensure that the remaining exposure pathway, if any, is controlled.

Beazer agrees with EPA that revisions such as those discussed herein will require public notification and comment. Beazer is confident that all community concerns can be addressed promptly and adequately and will provide EPA with any support required. We look forward to EPA's positive response to Beazer's proposed concrete cap.

Sincerely,

Michael Slenska, P.E.
Project Manager

cc: R. Lucas - Beazer (w/o Attachment)
S. Radel - Beazer
M. White - Baker & Botts
Office of Regional Counsel, EPA - Region VI
Chief - Texas Construction Section, EPA - Region VI
T. Collins - South Cavalcade Superfund Site Coordinator (TNRCC)
M. McDonnel - Fluor Daniel
B. Hickman - Turner & Associates
J. Zubrow - KEY Environmental, Inc.
M. Bruchman - Dames & Moore, N.C.
T. Hopper - Dames & Moore, Houston

012821

OCT 05 1995

Mike Slenska
Beazer East, Inc.
436 Seventh Avenue
Pittsburgh, PA 15219-1822

RE: Contemplated Soil Remedial Action Revision, South Cavalcade Superfund Site, Beazer Ltr dated September 29, 1995

Dear Mr. Slenska:

We reviewed the referenced letter in which Beazer proposes capping "areas of concern" with concrete and believe the proposal has merit. However, before we can consider this proposal further we would like additional information. Consequently, we request Beazer provide the following information:

- Define the "area of concern" referenced in Beazer's letter

- Provide a conceptual cap design (plan and cross section dimensions, location, general specifications, and construction quality assurance)

- Provide an economic analysis comparing cap and bioremediation cost

- Provide a design and construction schedule

- Provide a general description of the maintenance required to maintain the cap's integrity

- Provide assurance that the land owners do not object to a cap in lieu of bioremediation

After we review the information Beazer provides we will determine if Beazer's proposal to change the remedy is appropriate. If you have any questions please call me at (214) 665-8523.

Sincerely,

Glenn Celerier, P.E.
Project Manager

012823

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

October 20, 1995

Nations Way Transport Service, Inc.
5601 Holly Street
Commerce City, Colorado 80022

Attn: Mr. Monte Hutchinson
Senior Vice President
Transportation and Maintenance

RE: Concurrence with Site Capping
South Cavalcade CERCLA Site
Houston, Texas

Dear Monte:

This letter is a follow-up to our telephone conversation during the last week of September, 1995, in which we discussed the possibility of placing a concrete cover over the impacted soil areas of the South Cavalcade CERCLA Site (Site). As we discussed, this concrete cover would be in lieu of bioremediation for the impacted Site soils. This letter is intended to confirm in writing your verbal concurrence with the proposed concrete cover as a modified soil remedial action.

On Sept. 29, 1995, Beazer East, Inc. (Beazer) submitted a letter to the United States Environmental Protection Agency (EPA) which sets forth the risk analysis and rationale in support of concrete capping as the most cost effective and preferred alternative soil remedy for the Site. That letter is attached for your review. In response to Beazer's submittal, the EPA requested that we provide additional information concerning the proposed concrete cap. EPA's Oct. 5, 1995 request letter is also attached for your review. Included in the EPA letter is a request that Beazer "Provide assurance that the land owners do not object to a cap in lieu of bioremediation."

There are two impacted soil zones located on the grassy area just south of the maintenance shop on Nations Way Transport Service, Inc. (Nations Way) property which cover a total area of approximately 1,750 square feet. As we discussed, this is a relatively small area and Beazer believes that the most appropriate remedial action may be to excavate and dispose of this material at an off-site disposal facility. However, this remedial option for the soils on your property has not been finalized. In the event that alternate plans are necessary, Beazer will develop plans and specifications to place a concrete cover over the impacted soil areas at an elevation above the existing grades

Beazer is preparing a conceptual design submittal to provide the EPA with the requested additional information, and in that submittal Beazer will propose excavation and off-site disposal

for the impacted soils on your property. However, should the EPA require the concrete cover to be placed over all impacted soil areas, the conceptual design will be revised to include sketches of the concrete cover arrangement consistent with the configuration described above. Additionally, it is Beazer's hope to include the above referenced assurance of landowner concurrence with the conceptual design submittal.

Beazer believes that the signed Access Agreement already in existence between Beazer and Nations Way provides any requisite authorization needed for Beazer to implement the Record of Decision (ROD) selected remedy, whether amended or modified to provide for alternative remedial action such as concrete capping. Nevertheless, as a courtesy to Nations Way, and in order for Beazer to provide to EPA the above noted assurance, and to ensure that open communications are maintained between Beazer and Nations Way, Beazer is forwarding this request for written confirmation of our previous discussions. To confirm your prior verbal concurrence with using an alternative soil remediation plan, including excavation and off-site disposal or a concrete concrete cover, in lieu of bioremediation please sign on the space provided below and return the original to my attention using the enclosed self-addressed overnight envelope, retaining a copy for your files. A copy of this signed letter will be included in our conceptual concrete cover design submittal to the EPA. Should Beazer receive EPA approval to proceed with a detailed design of the concrete cover, or excavation and off-site disposal of the impacted soils on your property, Beazer will work with Nations Way to accommodate any reasonable comments or concerns regarding the design.

If you should have any questions or require additional information please contact me at (412) 227-2174.

Sincerely,

Michael Slenska, P.E.
Project Manager

Approved by:

10/25/95

Mr. Monte Hutchinson Date
Senior Vice President
Transportation and Maintenance

Attachments

cc: Steve Radel
Bob Lucas
Troy Hopper, Dames & Moore

Beazer

BEAZER EAST, INC., 436 SEVENTH AVENUE, PITTSBURGH, PA 15219

012825

October 20, 1995

Trucking Properties, Inc.
Wedge International Tower
1415 Louisiana, Suite 3000
Houston, Texas 77002

Attn: Mr. Robert E. Sternenberg
President

RE: Concurrence with Site Capping
South Cavalcade CERCLA Site
Houston, Texas

Dear Bob:

This letter is a follow-up to our Sept. 21, 1995 meeting in which we discussed the possibility of placing a concrete cover over the impacted soil areas of the South Cavalcade CERCLA Site (Site). As we discussed, this concrete cover would be in lieu of bioremediation for the impacted Site soils. This letter is intended to confirm in writing your concurrence with the proposed concrete cover as a modified soil remedial action as you verbally expressed during the above referenced meetings.

Following our Sept. 21, 1995 meeting, Beazer East, Inc. (Beazer) submitted a letter to the United States Environmental Protection Agency (EPA) which sets forth the risk analysis and rationale in support of concrete capping as the most cost effective and preferred alternative soil remedy for the Site. That letter, dated Sept. 29, 1995, is attached for your review. In response to Beazer's submittal, the EPA requested that we provide additional information concerning the proposed concrete cap. EPA's Oct. 5, 1995 request letter is also attached for your review. Included in the EPA letter is a request that Beazer "Provide assurance that the land owners do not object to a cap in lieu of bioremediation."

For the impacted soil areas located on Trucking Properties, Inc. (TPI) property the concrete cap would cover approximately sixty percent of the small grassy area located just south of the warehouse. We anticipate that the concrete cover would be placed above the existing grades in this area, and would include a small ramp making the cover accessible for personal vehicle parking.

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Beazer is preparing a conceptual design submittal to provide the EPA with the requested additional information. This conceptual design will include sketches of the concrete cover arrangement consistent with the configuration described above. Additionally, it is Beazer's hope to include the above referenced assurance of landowner concurrence with the conceptual design submittal.

Beazer believes that the signed Access Agreement already in existence between Beazer and TPI provides any requisite authorization needed for Beazer to implement the ROD selected remedy, whether amended or modified to provide for an alternative remedial action such as concrete capping. Nevertheless, as a courtesy to TPI, and in order for Beazer to provide to EPA the above noted assurance, and to ensure that open communications are maintained between Beazer and TPI, Beazer is forwarding this request for written confirmation of our previous discussions. To confirm your prior verbal concurrence with using a concrete cover in lieu of bioremediation please sign on the space provided below and return the original to my attention using the enclosed self-addressed overnight envelope, retaining a copy for your files. A copy of this signed letter will be included in our conceptual concrete cover design submittal to the EPA. Should Beazer receive EPA approval to proceed with a detailed design of the concrete cover, Beazer will work with TPI to accommodate any reasonable comments or concerns regarding the design.

If you should have any questions or require additional information please contact me at (412) 227-2174.

Sincerely,

Michael Slenska, P.E.
Project Manager

Approved by:

11/7/95

Mr. Robert E. Sternenberg Date
President - Trucking Properties, Inc.

Attachments

cc: Steve Radel
Bob Lucas
Troy Hopper, Dames & Moore

012827

PALLETIZED TRUCKING, INC.
2001 Collingsworth
Houston, Texas

January 8, 1996

Mr. Glenn Celerier, P.E.
Superfund Division
U.S. Environmental Protection Agency
1445 Ross Ave.
Dallas, TX 75202

Re: South Cavalcade CERCLA Site, Houston, Texas
Property Owner Consent to Concrete Capping Proposal

Dear Mr. Celerier:

Beazer East, Inc. has provided us with a copy of the final conceptual design report for its proposal of concrete capping as the remedy for contamination located on our property at the South Cavalcade CERCLA site in Houston, Texas. Beazer East, Inc. has asked us to give you our written consent to the concept of concrete capping. Our concerns about the proposal can be grouped generally into two types of issues, one of which is whether the proposal protects human health and the environment, and the other of which is how the new cap will affect the use and enjoyment of our property long term.

Based on my telephone conversations with you previously, we understand that the Environmental Protection Agency will approve the concrete capping proposal as a remedy for this CERCLA site only if you conclude that this remedy will protect human health and the environment as long as the contamination remains on this property. Therefore, we are deferring to the Agency with regards to these health and environmental considerations.

Beazer has given us certain assurances that it will address our other concerns about the concrete capping proposal, relating to the impact of the new concrete cap on a permanent basis as it affects our existing improvements and the operations on our property, by incorporating our reasonable comments and modifications into the final design, plans and specifications for the concrete cap, and by accommodating us on various issues relating generally to the construction process. In reliance upon those assurances, we are giving you this letter as evidence of our consent to the concept of concrete capping as a remedy for the contamination existing on this property.

If you have any questions or require any additional information, please do not hesitate to contact me at (713) 225-3303.

Very truly yours,

PALLETIZED TRUCKING, INC.

By: _____
Name: Michael Rex King
Title: Vice President

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APPENDIX B - CONCEPTUAL DESIGN OF CONCRETE CAP SOUTH CAVALCADE SUPERFUND SITE

1.0 INTRODUCTION

On September 29, 1995, Beazer East, Inc. (Beazer) submitted a letter to the United States Environmental Protection Agency (EPA) which describes the risk analysis and rationale in support of concrete capping as the most cost effective and preferred alternative soil remedy for the South Cavalcade CERCLA Site (Site) located in Houston, Texas. On October 5, 1995, in response to Beazer's submittal, the EPA requested that Beazer provide additional information concerning the proposed concrete cover.

This Conceptual Design Report presents the requested additional information and includes: a general description of the proposed concrete cover configuration including preliminary drawings and specifications, a discussion of the additional tasks required to complete the proposed concrete cover detailed design, an economic evaluation comparing the proposed concrete cover to washing of the Site soils, documentation of property owner concurrence with using a concrete cap in lieu of ROD selected soil remedies, and a preliminary schedule for the design and construction of the proposed concrete cover.

2.0 CONCEPTUAL DESIGN

Beazer has developed a conceptual design configuration for each of the four main soil remediation areas of the Site. These four main areas, as shown on Figure 1, are the Southeast, Southwest, and Northeast Areas and the Groundwater Treatment Plant Area of the Site as described in the Soil Remedial Design - 100% Design Submittal, Dames & Moore, December, 1994. Several specific design criteria were used to develop the proposed concrete cover conceptual designs for each of the four soil remediation areas. These design criteria are presented below:

- Cover the Impacted Zones - As determined by the recently completed soil Confirmational Sampling Program, the impacted soil zones have been delineated and confirmed for each of the four main areas. The proposed concrete cover should, at a minimum, cover at least these impacted zones.

- Provide a Useable Concrete Cover - The concrete cover should be designed to allow use of the covered areas which is consistent with the current property operations.

- Minimize Impacted Soil Excavation - The design should minimize the amount of impacted soil requiring excavation during construction of the concrete cover. Any cut and fill required for construction of the concrete cap should achieve a balance such that excavated impacted material can be placed as fill over other impacted zones thereby limiting the need for off-site disposal of impacted material.

- Provide Adequate Drainage - The surface contours of the concrete cover should provide for positive drainage of the cover, and wherever possible remain consistent with the existing drainage patterns of the Site.

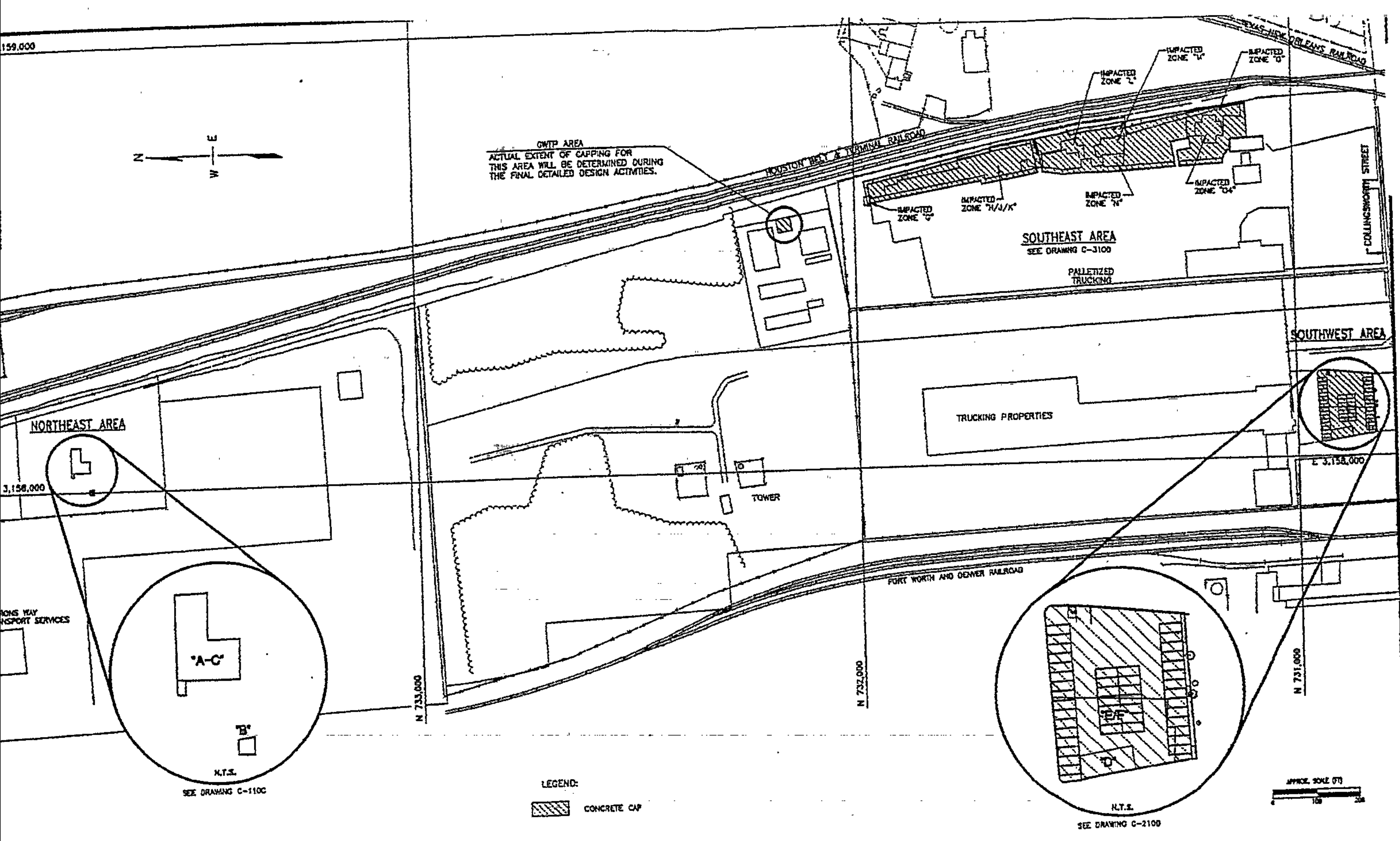
The following discussion presents the concrete cover conceptual design for each of the four Site areas described above.

2.1 SOUTHEAST AREA

The Southeast Area is a narrow strip of land located on the east side of Palletized Trucking, Inc. (Palletized) property. There are six impacted soil zones in this area which cover a total area of approximately 35,500 square feet.

The existing surface of the Southeast Area consists of an assortment of materials, but is predominantly covered with crushed concrete. Material excavated during Confirmational Sampling Plan (CSP) activities was backfilled with no mechanical compaction and presently exists in a loose state, while material not disturbed by CSP activities remains in a well compacted state.

The Southeast Area is relatively flat with slightly higher elevations located approximately in the middle of this narrow area. This high point divides the Southeast Area into northern and southern drainage areas. Both areas have a general easterly slope; therefore, runoff from these areas flows to the HB&T Railway ditch located to the east of the Site. In addition to its own surface runoff, the northern drainage area includes surface runoff from the easterly sloping existing concrete located to the west of this area.



DRAWING SCALE	AS SHOWN	
REFERENCE NAMES		DATE
DESIGNED BY:		
DRAWN BY:		
CHECKED BY:		
APPROVED BY:		
FILE:		

Dames & Moore

BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

FIGURE 1
CONCEPTUAL CAPPING DESIGN
SITE KEY MAP

REVISION A

DRAWING NO. C-002D

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2.1.1 Concrete Cover Configuration

The concrete cap for the Southeast Area will cover the majority of the narrow strip of land on the east side of Palletized property, which will provide a suitable tarmac for truck use. The general layout for the concrete cover is shown in Figure 2. Additional details for the Southeast Area concrete cover are shown in Figures 3 and 4. The following text describes how the concrete cover configuration shown in Figures 2, 3, and 4 satisfies the design criteria described above in Section 2.0.

- Cover the Impacted Zones
    - To provide Palletized with a continuous pavement for operations the concrete cap will be constructed over both impacted and nonimpacted zones.

- Provide a Useable Concrete Cover
    - The slope of the concrete tarmac will be minimal to enable trailers to be parked.
    - Abrupt changes in grades will be avoided. Grade transitions will be achieved by utilizing ramps as shown in Figure 5.
    - The concrete cap will be wide enough along the entire length to accommodate Palletized's trailer sizes of 40 and 48 feet lengths.

- Minimize Impacted Soil Excavation
    - Cross-Section A as shown in Figure 3 is a typical cut section. Impacted excavation from this area will be placed as fill material over other impacted zones. Cross-Section A is typical of approximately 20 percent of the Southeast Area.
    - Cross-Section B as shown in Figure 3 is a typical fill section. Excavation of impacted or nonimpacted material is expected not to be required in the fill sections. Cross-Section B is typical of approximately 80 percent of the Southeast Area.
    - Cross-Section C as shown in Figure 3 is cut through all the Southeast impacted zones. Inspection of this cross-section reveals the volume of fill within the impacted zones is greater than the expected volume of impacted excavation.

- Earthwork quantities associated with the presented cross-sections are as follows:

Fill Required Over Impacted Zones	510 cubic yards
Cut Required Over Impacted Zones	93 cubic yards
Balance	**417 cubic yards of fill**
Fill Required Over Nonimpacted Zones	680 cubic yards
Cut required Over Nonimpacted Zones	170 cubic yards
Balance	**510 cubic yards of fill**

The reported quantities are approximate and are subject to slight modifications during final design.

- The existing soil stockpiles located onsite will be used as fill material. These stockpiles have been tested following the methods contained in the EPA approved Stockpile Sampling Plan, included as part of Appendix A-1 of the Remedial Action Work Plan. Test results have demonstrated that these soil stockpiles do not contain potentially carcinogenic polynuclear aromatic hydrocarbons (pcPAHs) above the Record of Decision (ROD) goal of 700 ppm.
- The impacted soil excavated in the Northeast Area will be used as fill over the impacted zones of the Southeast Area.

- Provide Adequate Drainage

  - In the northern drainage area runoff from the existing westerly concrete pavement will be intercepted at the constructed ramp and directed to the north end of the cap or to a drainage swale formed into the cap as shown on Figure 2 and Cross-section C of Figure 3.
  - In the northern drainage area the concrete cap will have a cross drainage slope to the east which will flow into a swale formed into the cap as shown on Cross-section A and B of Figure 3. The runoff from the northern end of the cap will be directed to an unpaved area in the northeast corner of Palletized and ultimately routed to the existing HB&T Railway ditch.
  - In the southern drainage area the concrete cap will have a cross drainage slope to the east which will flow into a swale formed into the cap as shown on Cross-section A and B of Figure 3. The runoff from the southern end of the cap will

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be directed to an existing catch basin located approximately 220 feet south of the cap in the southeast corner of Palletized.

2.1.2 Concrete Cover Maintenance

Due to the nature of properly designed and constructed concrete pavements maintenance for the proposed cap will be limited. By designing properly spaced expansion joints in the concrete cap cracking of the cap will be controlled at the joints. Expected minimum joint spacing is 15 to 25 feet. The expansion joints will be designed to be liquid tight to minimize infiltration of storm water.

2.2 SOUTHWEST AREA

The Southwest Area is a relatively square piece of land located at the south entrance of Trucking Properties, Inc. (TPI) property. There are two impacted soil zones in this area which cover a total area of approximately 8,300 square feet.

The existing surface of the Southwest Area consists of grass. Material excavated during Confirmational Sampling Plan (CSP) activities was backfilled with no mechanical compaction and presently exists in a loose state, while material not disturbed by CSP activities remains in a well compacted state.

The Southwest Area is relatively flat with a slight crown in the middle on a north and south axis. Drainage in this area is to the east and west away from the slight crown described above.

2.2.1 Concrete Cover Configuration

The concrete cap for the Southwest Area will cover approximately 60 percent of the square piece of land located at the south entrance of TPI property. The concrete cap will function as suitable space for future employee parking. The general layout of the concrete cap is shown in Figure 6. Additional details for the Southwest Area concrete cover are shown in Figure 7. The following text describes how the concrete cover configuration shown in Figures 6 and 7 satisfies the design criteria described above in Section 2.0.

- Cover the Impacted Zones

  - To provide TPI with a continuous pavement for an employee parking lot a concrete cap will be constructed over both impacted and nonimpacted zones.

- Provide a Useable Concrete Cover

  - The slope of the concrete cap will be minimal to facilitate use as a vehicle parking area.
  - Abrupt changes in grades will be avoided. Grade transitions will be achieved by utilizing ramps as shown in Figure 5. To access the top of the cap from the existing TPI driveway a ramp will be constructed as shown on Cross-Section D of Figure 7.
  - The concrete cap will be of sufficient area to accommodate employee parking of private vehicles.

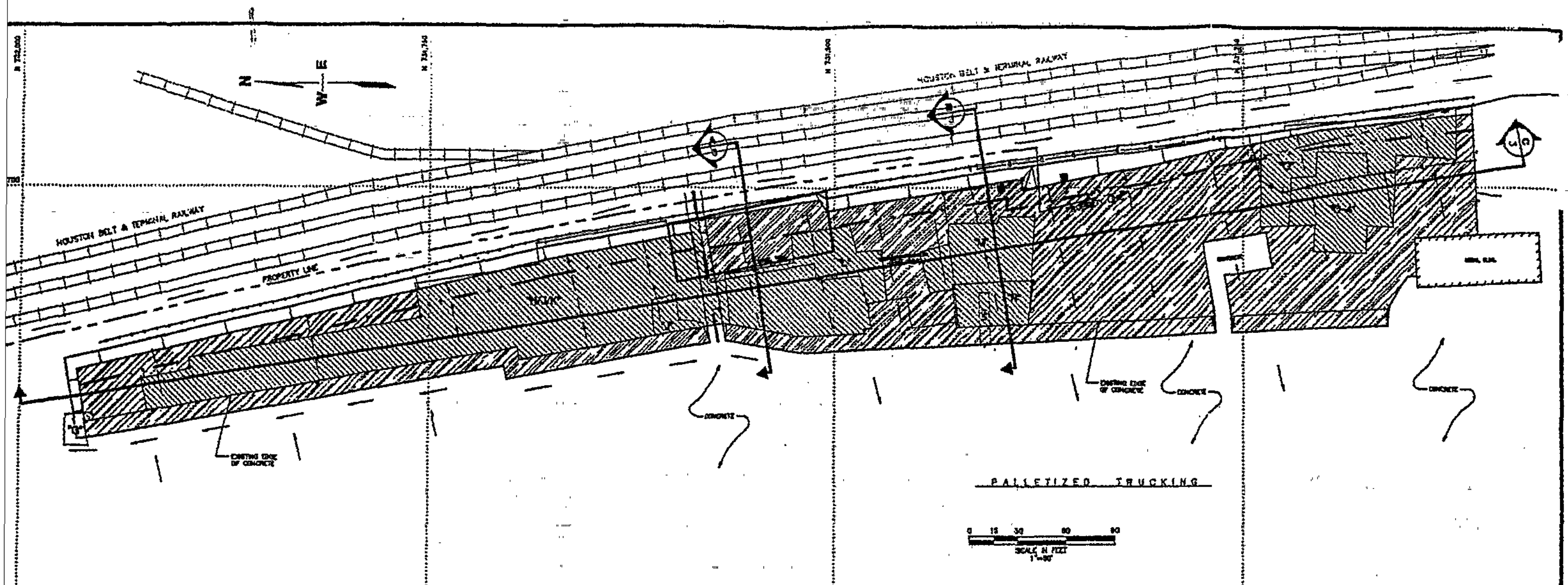
- Minimize Impacted Soil Excavation

  - Included as Figure 7 are typical cross-sections for the Southwest Area. Cross-Section D is cut through impacted Zone E/F and D and a non-impacted area. Cross-Section E is cut along a north-south axis and extends to Collingsworth Street. Inspection of the presented cross-sections indicates excavation of impacted material will be at a minimum.

  - Earthwork quantities associated with the presented cross-sections are as follows:

    Fill Required Over Impacted Zones . . . . . 10 cubic yards
    Cut Required Over Impacted Zones . . . . . 5 cubic yards
    Balance . . . . . 5 cubic yards of fill

    Fill Required Over Nonimpacted Zones . . . . . 105 cubic yards
    Cut Required Over Nonimpacted Zones . . . . . 10 cubic yards
    Balance . . . . . 95 cubic yards of fill



0 15 30 60 90
SCALE IN FEET
1"=30'

QUANTITIES					
ZONE		DEPTH (FT.)	AREA (SF)	VOLUME (CY)	SUBTOTAL (CY)
NORTHEAST	A/C	0-2	1,731	130	
	B	0-2	116	8	136
SOUTHEAST	G	2-4	266	20	
	M	0-2	2,300	205	
	N	2-4	1,3[illegible]	6[illegible]	
	O	0-2	5,720	400	
	O	2-4	2,8[illegible]	2[illegible]	
	H/I/K	0-2	18,748	1,3[illegible]	
	J	2-4	467	3[illegible]	
	L	2-4	4,738	3[illegible]	2,8[illegible]
SOUTHWEST	E/F	2	7,313	5[illegible]	
	D	2	1,037	77	6[illegible]
TOTAL					3,[illegible]

LEGEND:

- CONCRETE OVER IMPACTED ZONE
- CONCRETE OVER NONIMPACTED ZONE
- CONCRETE WALL (SUBGRADE)
- MONITORING WELL
- HSC GAS LINE
- EXIST FENCE
- PULL BOX
- CONCRETE SWALE
- EDGE OF CONCRETE CAP
- DRAINAGE DIRECTION

DRAWING SCALE	1"=30'	
REFERENCE NAMES		DATE
DESIGNED BY:	[illegible]	10-23-96
DRAWN BY:	[illegible]	10-24-96
CHECKED BY:	[illegible]	10-28-96
APPROVED BY:	[illegible]	10-28-96
FILE:		

Dames & Moore

BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

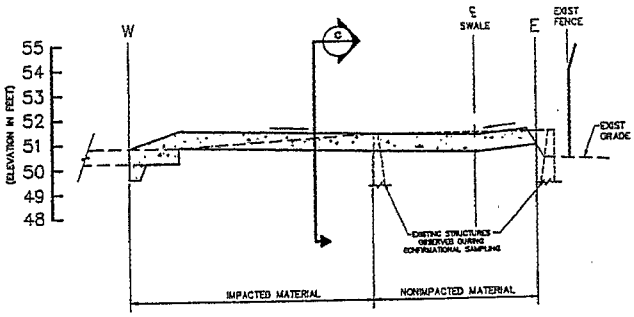
FIGURE 2
CONCEPTUAL CAPPING DESIGN
SOUTHEAST AREA PLAN

REVISION: A
DRAWING NO.: C-310D

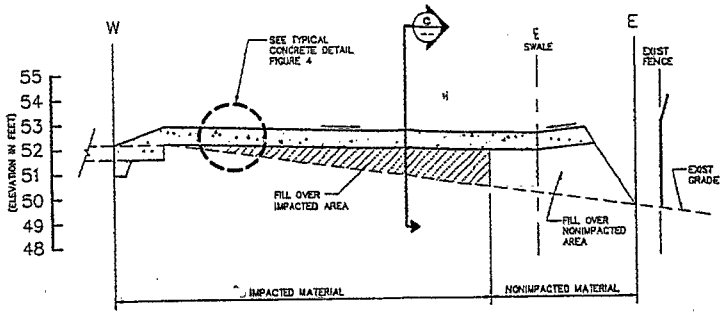
REV		DESCRIPTION		
A		CONCEPTUAL DESIGN SUBMITTAL		11-13-[illegible]

012837

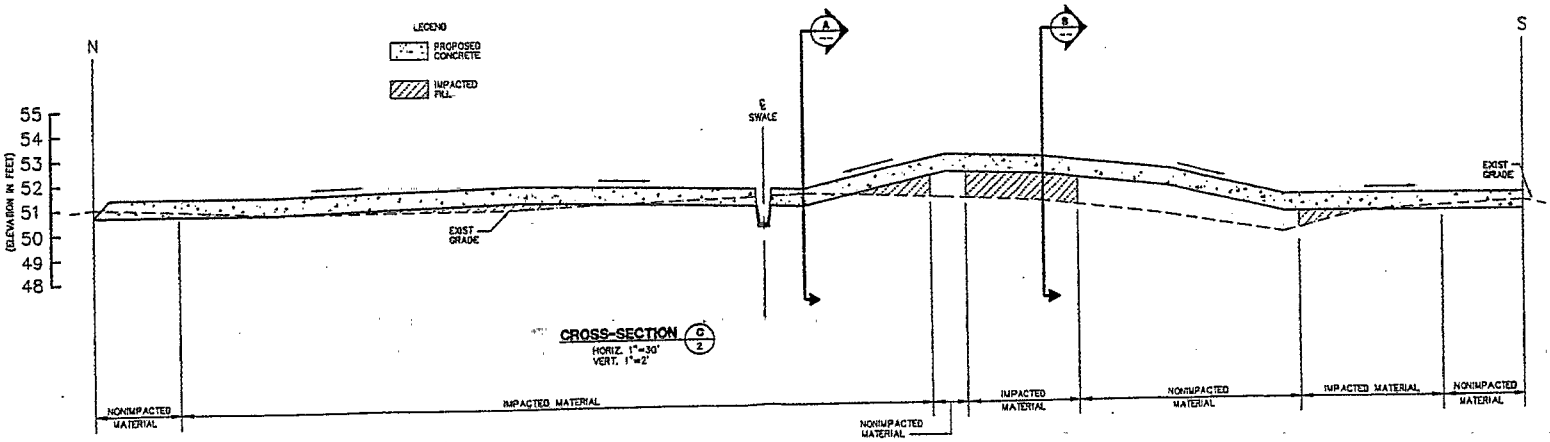
012838



CROSS-SECTION A/2
HORIZ. 1"=10'
VERT. 1"=2'



CROSS-SECTION B/2
HORIZ. 1"=10'
VERT. 1"=2'



CROSS-SECTION C/2
HORIZ. 1"=30'
VERT. 1"=2'

DRAWING SCALE	AS SHOWN
REFERENCE NAMES	DATE
DESIGNED BY:	10-23-98
DRAWN BY:	10-23-98
CHECKED BY:	10-23-98
APPROVED BY:	10-23-98

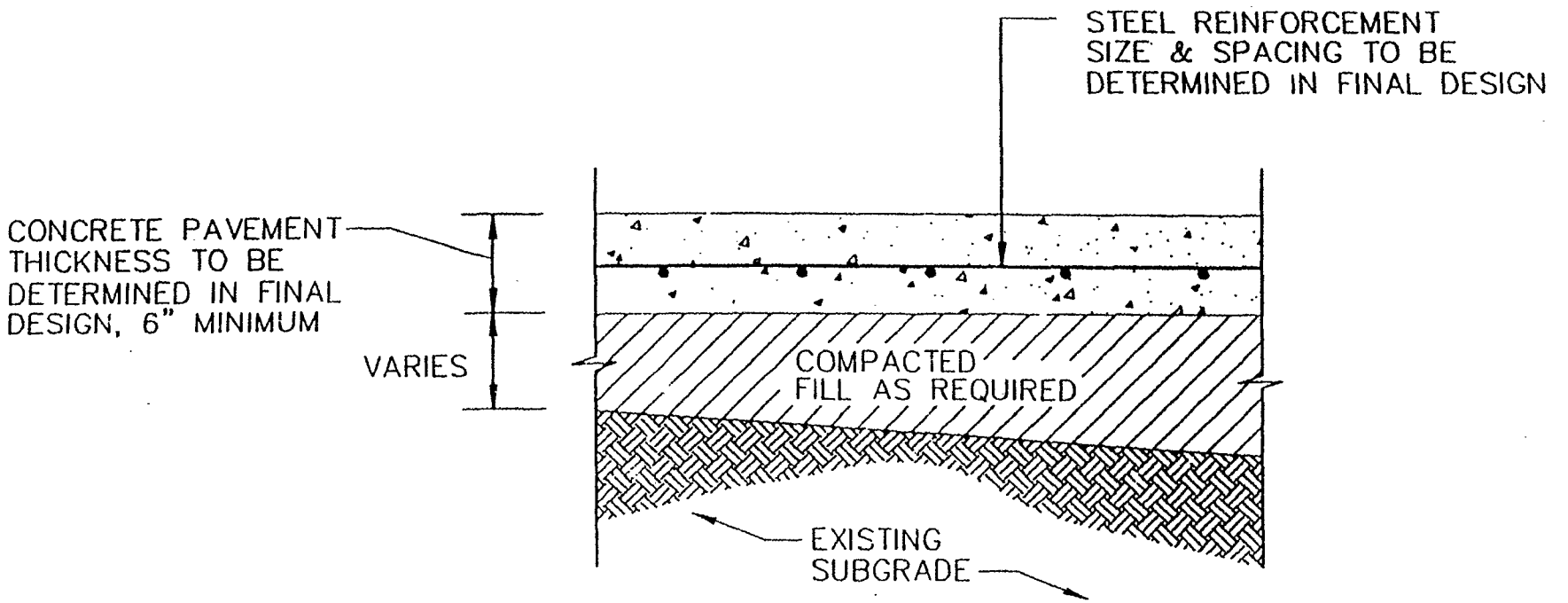
Dames & Moore

BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

FIGURE 3
CONCEPTUAL CAPPING DESIGN
SOUTHEAST AREA CROSS-SECTIONS

DRAWING NO. C-310E
REVISION A

DRAWN BY: HSI DATE: 10/25/95	CHECKED BY: BDB DATE: 10/25/95	APPROVED BY: TEH DATE: 10/27/95	REVISIONS: A	FILE NO: 18804-303-186



TYPICAL CONCRETE DETAIL

NOT TO SCALE

FIGURE 4
CONCEPTUAL CAPPING DESIGN
TYPICAL CONCRETE DETAIL
FOR
BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

DAMES & MOORE

DRAWN BY: HSI DATE: 10/25/95	CHECKED BY: BDB DATE: 10/25/95	APPROVED BY: TEH DATE: 10/27/95	REVISIONS: A	FILE NO: 18804-303-186

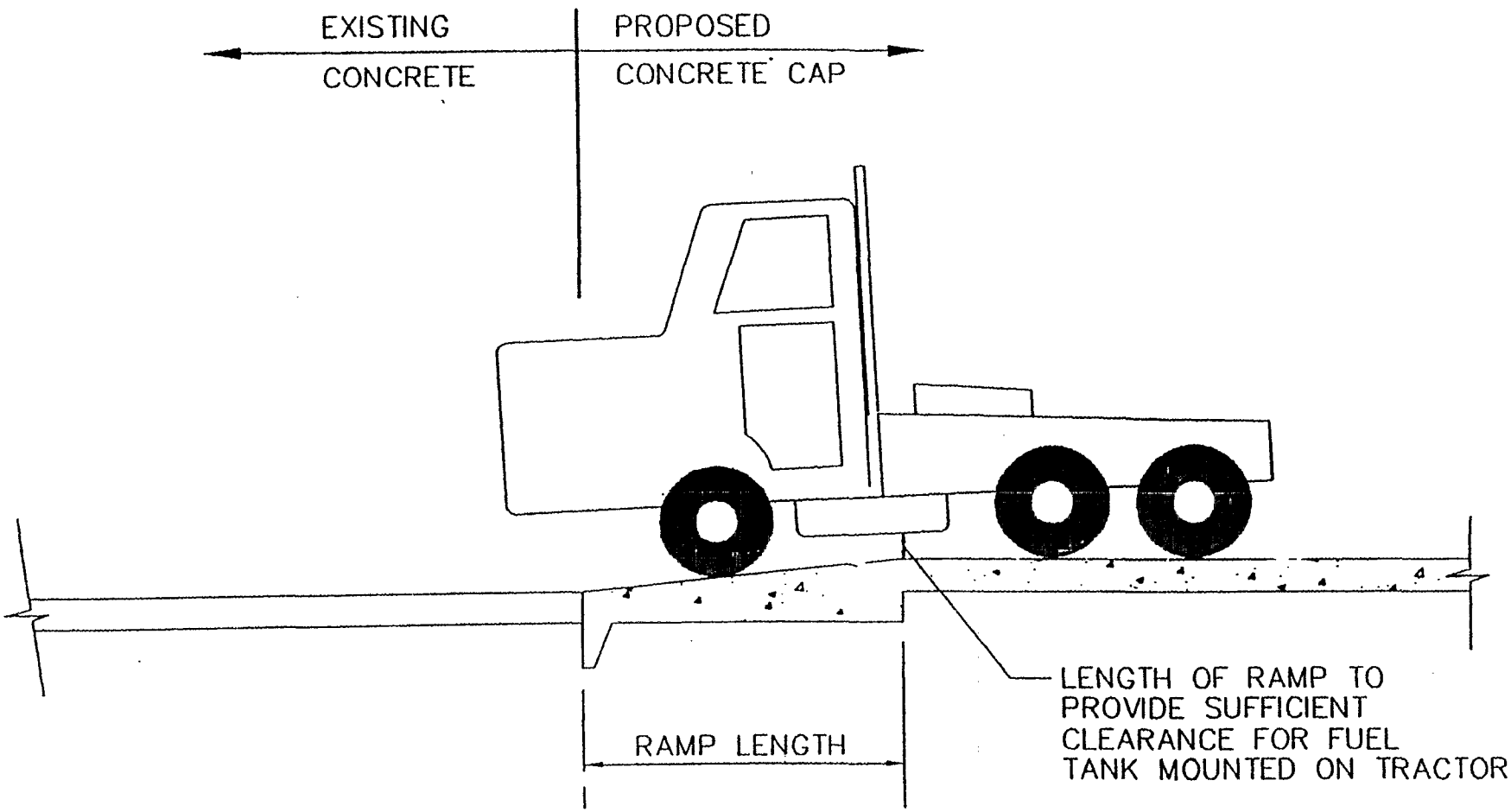
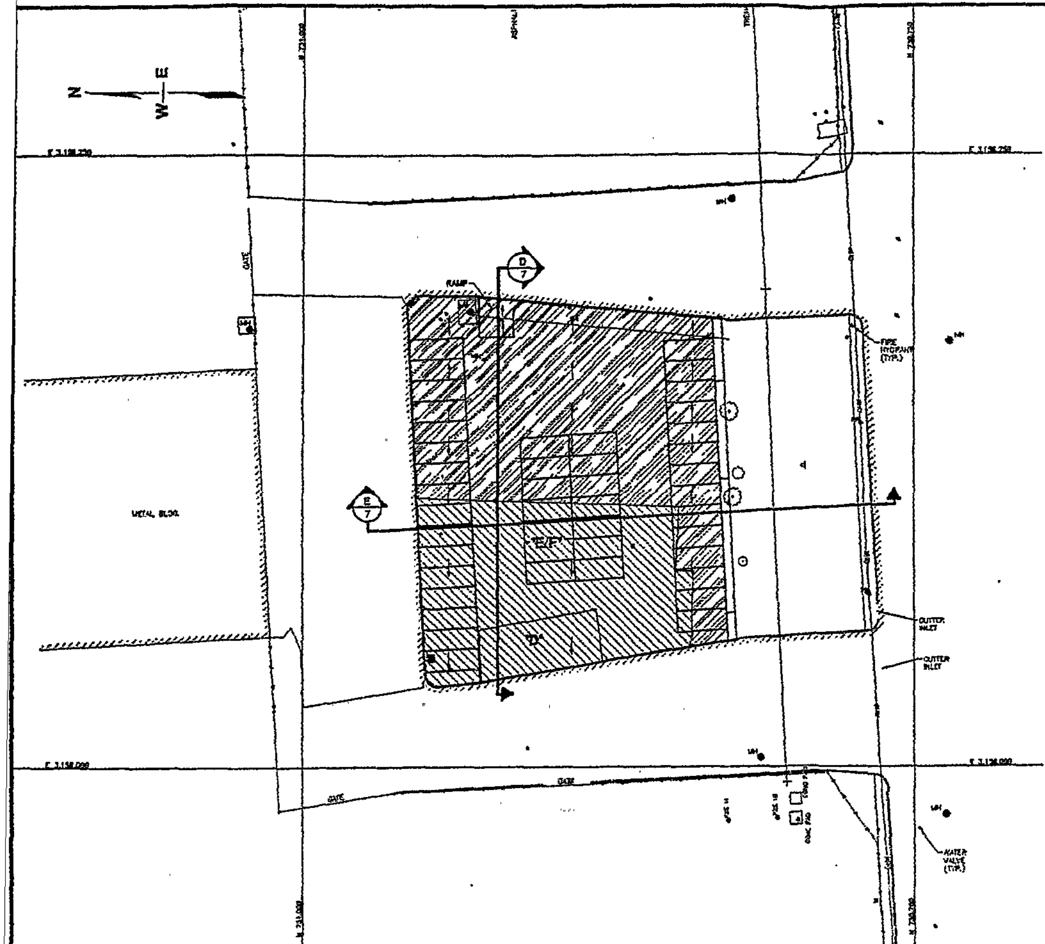


FIGURE 5
CONCEPTUAL CAPPING DESIGN
SOUTHEAST RAMP CLEARANCE
FOR
BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

NOT TO SCALE

DAMES & MOORE

012840



012841

QUANTITIES					
ZONE		DEPTH (FT.)	AREA (SF)	VOLUME (CY)	SUBTOTAL (CY)
NORTHEAST	A/C	0-2	1,731	128	
	B	0-2	114	8	136
SOUTHEAST	G	2-4	268	20	
	M	0-2	3,565	264	
	N	2-4	1,231	83	
	O	0-2	6,730	499	
	G	2-4	2,810	208	
	H/J/K	0-2	18,744	1,388	
	J	2-4	417	31	
	L	2-4	4,728	350	2,834
SOUTHWEST	E/F	2	7,233	536	
	D	2	1,037	77	613
TOTAL					3,603

LEGEND:

- CONCRETE OVER IMPACTED ZONE
- CONCRETE OVER NONIMPACTED ZONE
- EDGE OF CONCRETE CAP
- DRAINAGE DIRECTION

0 10 20 40 80
SCALE IN FEET
1"=40'

A	CONCEPTUAL DESIGN SUBMITTAL

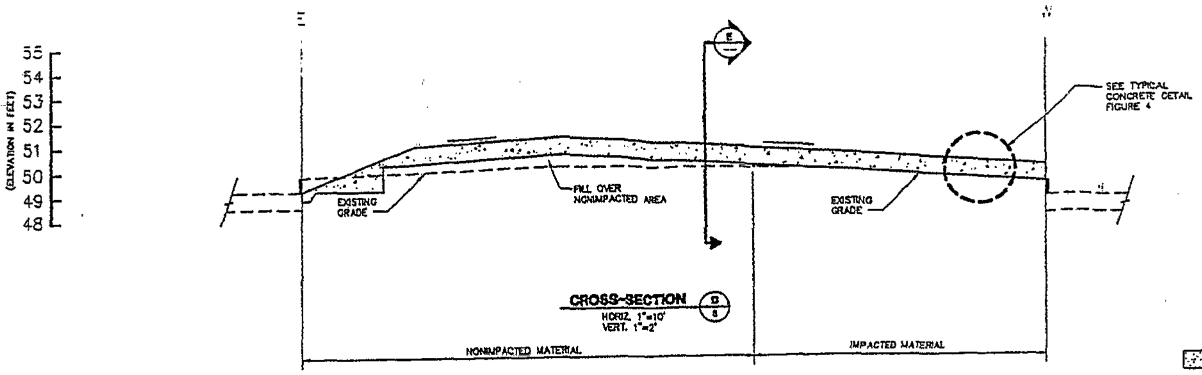
DRAWING SCALE	1"=40'
REFERENCE NAMES	DATE
DESIGNED BY: B. BRANOCK	10-22-96
DRAWN BY: H. JAMES	10-23-96
CHECKED BY: T. HOPPER	10-26-96
APPROVED BY: T. HOPPER	10-28-96
FILE:	

Dames & Moore

BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

FIGURE 6
CONCEPTUAL CAPPING DESIGN
SOUTHWEST AREA PLAN

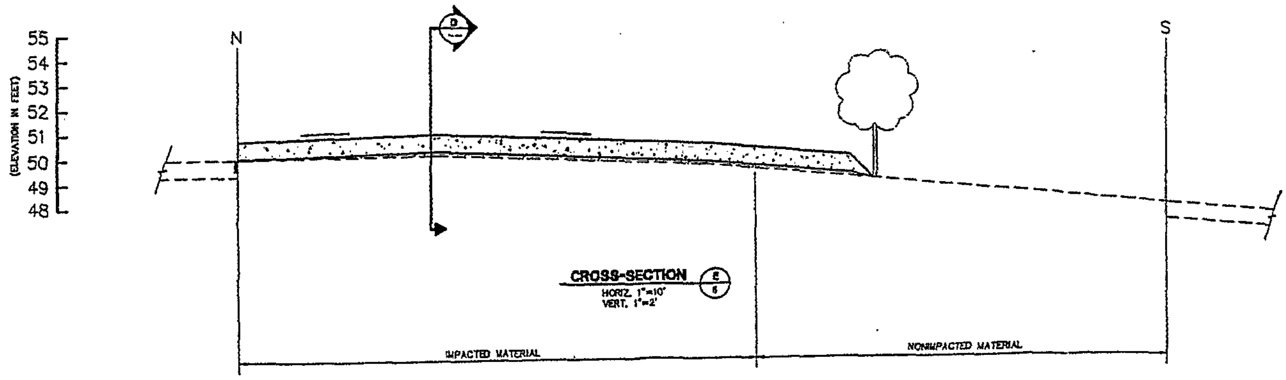
REVISION: A
DRAWING NO. C-2101



LEGEND

PROPOSED CONCRETE

FILL OVER IMPACTED AREA



DRAWING SCALE	AS SHOWN	
REFERENCE NAMES		DATE
DESIGNED BY:	[illegible]	[illegible]
DRAWN BY:	[illegible]	[illegible]
CHECKED BY:	[illegible]	[illegible]
APPROVED BY:	[illegible]	[illegible]
FILE:	[illegible]	

Dames & Moore

BEAZER EAST, INC.
SOUTH CAVALCADE SITE
HOUSTON, TEXAS

FIGURE 7
CONCEPTUAL CAPPING DESIGN
SOUTHWEST AREA CROSS-SECTIONS

REVISION A

DRAWING NO. C-210

012843

The reported quantities are approximate and are subject to slight modifications during final design.

- The existing soil stockpiles located onsite will be used as fill material. These stockpiles have been tested following the methods contained in the EPA approved Stockpile Sampling Plan, included as part of Appendix A-1 of the Remedial Action Work Plan. Test results have demonstrated that these soil stockpiles do not contain potentially carcinogenic polynuclear aromatic hydrocarbons (pcPAHs) above the ROD goal of 700 ppm.

- <u>Provide Adequate Drainage</u>

  - To promote drainage away from the cap in the Southwest Area the cap will be constructed at a slightly higher grade but at a slope similar to the existing grade. A crown will be formed near the middle of the area and the cap will be sloped towards the existing curb whereupon surface runoff will discharge to the existing paved areas surrounding the Southwest Area.

2.2.2 Concrete Cover Maintenance

Maintenance for the concrete cap in the Southwest Area will be similar to that described for the Southeast Area.

2.3 NORTHEAST AREA

The Northeast Area is a relatively square piece of land located north of the maintenance shop on the eastern side of Nations Way Transport Service, Inc. (Nations Way) property. There are two impacted soil zones in this area which cover a total of approximately 1,845 square feet. These two impacted zones result in an in-place volume of approximately 140 cubic yards. Due to Nation Way's expressed interest to expand their trucking operations, and the relatively small impacted area and associated soil volumes in the Northeast Area, Beazer believes the most appropriate remedial action for this area is to excavate this material and backfill the excavation with clean fill. The in place volume of 140 cubic yards of excavated impacted material from the Northeast Area would be used as fill over impacted zones in the Southeast Areas. This will allow for final remediation of this area without introducing a small concrete cover which may eventually need to be incorporated into a larger paved area.

2.4 GROUNDWATER TREATMENT PLANT AREA

The undefined impacted area located on the north and east side of the GWTP, as shown on Figure 1, will be capped consistent with the type of concrete cover proposed for the Southeast and Southwest areas. During implementation of the detailed design the extent of this area will be defined, in part, using existing analytical soil data which was previously collected.

3.0 DETAILED DESIGN

3.1 ISSUES TO BE RESOLVED

As described in Section 2.0 above there are four design constraints to be addressed as part of the final design. These design constraints are: cover the impacted zones, provide a useable concrete cover, minimize impacted soil excavation, and provide adequate drainage. Issues which must be resolved to complete the final design include:

- Obtain approval from the EPA of this Conceptual Design Report.
- Confirm the proposed ramps in the Southeast and Southwest are suitable for use with the expected vehicles.
- Assess the existing moisture content and density characteristics of the subgrade materials in both the impacted and nonimpacted zones without performing an extensive intrusive geotechnical investigation.
- Develop methods to densify the in-place materials sufficiently to support the intended dead and live loads with minimal disturbance of the subgrade.
- Develop pavement design parameters such as a California Bearing Ratio (CBR) or a modulus of subgrade reaction (k) for the supporting subgrade.
- Determine the thickness, maintaining a minimum thickness of six inches, and reinforcement requirements for the concrete cap.

012845

APPENDIX A

COST ESTIMATES

012846

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Concrete Paving Cost Estimate
By: MF/BDB Date: 11/16/95

PAVING QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
	SOUTHEAST				
1	Demolish & Remove Surficial Concrete 1' thick	CY	344	$154.49	$53,145
2	Haul Surficial Concrete	LOADS	44	$700.00	$30,800
3	Disposal of Surficial Concrete as Non-Haz	TONS	874	$86.00	$75,164
4	Raise Vault Lids	EA	2	$800.00	$1,600
5	Excavate Clean Material	CY	169	$4.50	$761
6	Excavate Impacted Material	CY	93	$5.50	$512
7	Backfill With Stockpile and Imported Material	CY	791	$3.50	$2,769
8	Obtain Backfill from offsite (1-1/2" Limestone)	CY	364	$4.26	$1,551
9	Backfill Impacted Material	CY	229	$5.50	$1,260
10	Proofroll Area	SY	6,848	$1.20	$8,218
11	Dynamic Compaction	SY	1,053	$3.11	$3,275
12	Grade	SY	7,500	$1.69	$12,675
13	8" Concrete with #4 Reinforcements	SY	7,711	$26.38	$203,425
14	Concrete Wall 8" thick 6' tall	CY	39	$124.53	$4,797
	SOUTHEAST AREA SUBTOTAL				**$399,949**
	SOUTHWEST				
1	Clear & Grub: 4" maximum	SY	1,751	$1.25	$2,189
2	Haul Cleared Material from over Impacted Area	LOADS	8	$700.00	$5,600
3	Disposal of Cleared Material from over Impacted Area As Hazardous Material	TONS	151	$165.00	$24,915
4	Backfill Clean Material	CY	115	$3.50	$403
5	Obtain Backfill from offsite (1-1/2" Limestone)	CY	115	$4.26	$490

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Concrete Paving Cost Estimate
By: MF/BDB Date: 11/16/95

PAVING QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
6	Proofroll Area	SY	1,751	$1.20	$2,101
7	Dynamic Compaction	SY	804	$3.11	$2,500
8	Grade	SY	1,751	$1.69	$2,959
9	8" Concrete with #4 Reinforcements	SY	1,751	$26.38	$46,191
	SOUTHWEST AREA SUBTOTAL				$57,348
	NORTHEAST				
1	Excavate Impacted Material	CY	136	$5.50	$748
2	Backfill Area	CY	136	$3.50	$476
3	Obtain Backfill (Offsite Select Fill)	CY	136	$6.86	$933
	NORTHEAST AREA SUBTOTAL				$2,157
	GWTP AREA SUBTOTAL				
1	Proofroll Area	SY	278	$1.20	$334
2	Grade Area	SY	278	$1.69	$470
3	8" Concrete with #4 Reinforcements	SY	278	$26.38	$7,328
	GWTP AREA SUBTOTAL				$8,131
	GENERAL CONSTRUCTION COSTS (ALL AREAS)				
1	Mobilization/Demobilization	LS	1	$4,000.00	$4,000
2	Obtain Permit for City Parking Lot All Areas	LS	1	$500.00	$500
3	Construction Oversight	Days	45	$750.00	$33,750
4	Surveying	LS	1	$2,000.00	$2,000

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Concrete Paving Cost Estimate
By: MF/BDB Date: 11/16/95

PAVING QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
5	Remedial Design	LS	1	$19,500.00	$19,500
6	As-built Drawings	LS	1	$7,500.00	$7,500
	GENERAL CONSTRUCTION SUBTOTAL				$59,750
	PROJECT SUBTOTAL:				$557,335
	25% Contingency				$139,665
	TOTAL COST:				$697,000

012849

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Northeast BioCells Cost Estimate
By: BDB Date: 10/24/95

BIOCELL QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
	BIOPLOT CONSTRUCTION				
1	Clear and Grub Area - including trees	SY	5,556	$1.25	$6,945
2	Grade Area	SY	5,556	$0.42	$2,355
3	Berm Construction - 2 feet high Imported Clay	CY	572	$10.64	$6,081
4	Sand - 6" minimum beneath HDPE liner	CY	614	$6.87	$4,219
5	HDPE Liner 30 mil	SF	49,388	$0.70	$34,572
6	12" Pea Gravel (<3/4" diameter)	CY	1,229	$31.27	$38,433
7	Geotextile Material	SY	3,733	$3.27	$12,207
8	Excavate Impacted Material	CY	3,582	$5.50	$19,701
9	Impacted Material Preparation (85%)	CY	3,045	$17.38	$52,907
10	Impacted Soil Amendments (pine bark, urea)	CY	3,045	$15.00	$45,675
11	Handle, Sample and Dispose of over 1" Debris (12%) as Non-Hazardous	TONS	750	$86.00	$64,474
12	Transportation of Disposed Non-Haz Material	LOADS	38	$700.00	$37,050
13	Handle, Sample and Dispose of over 1" Debris (3%) as Hazardous	TONS	191	$165.00	$31,445
14	Transportation of Disposed Hazardous Material	LOADS	10	$700.00	$9,085
15	Backfill Impacted Material into BioCell	CY	7,650	$4.10	$31,365
16	1" Water Drip Lines HDPE	LF	3,520	$0.70	$2,464
17	1" VB-1 Valves	EA	44	$20.00	$880
18	1-1/2" PVC Water Line Header w/ bends	LF	25	$8.00	$200
19	Lateral "D" 3" Air Inlet Pipe with sock	LF	3,360	$0.50	$1,680
20	2" VBF-1 Valves	EA	42	$35.00	$1,470
21	6" Header "E" HDPE Pipe with connections	LF	420	$2.50	$1,050
22	3" Lateral "A" Air Discharge HDPE Pipe	LF	3,360	$0.30	$1,008

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Northeast BioCells Cost Estimate
By: BDB Date: 10/24/95

BIOCELL QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
23	6" Header "B" HDPE Pipe with connections	LF	420	$2.50	$1,050
24	8" Blower Suction "C" PVC Pipe with 2 90 bends	LF	50	$4.00	$200
25	3/8" Stainless Steel Tubing (ammonia)	LF	210	$7.19	$1,510
26	1/2" Copper Tubing (water line) FIELD ROUTED	LF	210	$3.77	$792
27	Misc. Fittings, Bolts, Couplings, & Valves, Inlet "F"	LS	1	$5,000.00	$5,000
28	8" Butterfly Valve	EA	1	$350.00	$350
29	Miscellaneous Instruments	LS	1	$10,000.00	$10,000
30	Pipe Stand Concrete 3000 psi/28 day & Steel Beams	EA	42	$200.00	$8,400
31	Piping Installation - 20 days labor : 3 man crew	DAYS	20	$1,050.00	$21,000
32	Piping Insulation - Water Mains	LS	1	$5,000.00	$5,000
33	Hypalon Cover (glue seams & anchor w/ sandbags)	SY	5,052	$10.00	$50,516
34	Additional Trenching to Northeast Location	LF	500	$25.00	$12,500
35	Rental of One FracTank	DAY	90	$30.00	$2,700
36	Sampling Surplus Trench Material	EA	1	$300.00	$300
37	As-Built Drawings	LS	1	$7,500.00	$7,500
	BIOPLOT CONSTRUCTION SUBTOTAL				$532,083
	BIOSKID PACKAGE & FOUNDATION				
1	Bioskid 6" Reinforced Concrete Foundation Concrete Foundation Will Extend 3' Beyond Skid.	SY	117	$18.95	$2,211
2	6" Limestone Compacted to 90% Modified Proctor for Bioskid foundation subbase	SY	117	$4.26	$497
3	6" Limestone Compacted to 90% Modified Proctor for Carbon Adsorbers Foundation 2 @ 10'x20'	SY	100	$4.26	$426
4	2 Metal Buildings	LS	1	$15,000.00	$15,000
5	2 Fences @ 26'x22' each	LF	192	$10.00	$1,920

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Northeast BioCells Cost Estimate
By: BDB Date: 10/24/95

BIOCELL QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
6	Blower Skid Package (SPATCO)	EA	2	..,000.00	$140,000
7	Blower Skid Installation	EA	2	$1,500.00	$3,000
	BIOSKID SUBTOTAL				$163,054
	OPERATION & MAINTENANCE				
1	Manpower to operate biocell (Part-Time: 33%) 13 hours per week @ $40.00/hour for 52 weeks for 5 years	5 YRS	1	$110,869.00	$110,869
2	Miscellaneous materials, supplies, rental equipment and maintenance for biocell for 5 years	5 YRS	1	$117,922.00	$117,922
3	Power (electricity) for 5 years	5 YRS	1	$131,206.00	$131,206
	Sampling (96 samples/biocell/year) for 5 years				
4	Validation (64 hours/year)	5 YRS	1	$32,802.00	$32,802
5	Sampling Labor (192 hours/year @ $72.00)	5 YRS	1	$56,681.00	$56,681
6	Lab Costs - ($300/sample+$400/quarter-organics	5 YRS	1	$242,732.00	$242,732
7	Four Quarterly Reports for Sampling per year	5 YRS	1	$123,006.00	$123,006
8	Miscellaneous Supplies for 5 years	5 YRS	1	$8,200.00	$8,200
	One Time Initial Sampling Fees (no validation)				
9	Sample Lab Costs	SAM	20	$100.00	$2,000
10	Sampling Labor	HR	10	$72.00	$720
11	Miscellaneous Supplies	LS	1	$500.00	$500
	OPERATION & MAINTENANCE SUBTOTAL:				$826,838
	BIOCELL DECOMISSIONING				
1	Clear And Grub Area - 3.5 additional acres	SY	16,865	$1.25	$21,081
2	Grade Area - 4.85 acres	SY	23,474	$1.06	$24,883
3	Proofroll Area - 4.85 acres	SY	23,474	$1.20	$28,169

Dames & Moore, Inc.
Job No. 18804-303-186
Beazer South Cavalcade Site
Northeast BioCells Cost Estimate
By: BDB Date: 10/24/95

BIOCELL QUANTITIES

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
4	Geotextile Material (3733 SY already in place)	SY	19,741	$3.27	$64,553
5	6" Limestone Compacted to 90% Modified Proctor	SY	23,474	$4.26	$99,999
6	Biocell Above Grade Piping Breakdown 3 man crew - 5 day labor	DAY	5	$1,050.00	$5,250
7	Dispose of Hypalon Liner as Hazardous Material 0.24#/SF for 36 mil Hypalon Liner	TONS	5	$165.00	$899
8	Disposal of Above Ground Biocell Piping as Hazardo	TONS	35	$165.00	$5,775
9	Transportation of Hazardous Disposal Materials	LOADS	2	$700.00	$1,400
	BIOCELL DECOMMISSIONING SUBTOTAL				$252,009
	GENERAL CONSTRUCTION COSTS				
1	Mobilization	LS	1	$10,000.00	$10,000
2	Construction Management and Oversight	DAYS	60	$750.00	$54,000
3	Survey	LS	1	$2,000.00	$2,000
	GENERAL CONSTRUCTION SUBTOTAL				$66,000
	PROJECT SUBTOTAL:				$1,839,784
	25% Contingency				$460,216
	TOTAL COST:				$2,300,000

Notes: Required Volume 7210 CY over two biocells
Biocell Dimensions: 2 biocells @ 210' X 80' X 7'

Note: This estimate does not include or stormwater treatment during construction.

Assumption: Use of two bioskid packages placed west of each each biocell, centered along the length.

Assumption: Soil Processing Unit still in place. Utilities for contractor still in place. Complete Re-Mobilization does not occur.
Assumption: O&M sampling costs were taken to present day value with n = 5 yrs and i = 7%
Assumption: Estimate Based on 3605 CY in place.

012853

APPENDIX B

SOIL WASHING COST ESTIMATE

012854

Dames & Moore, Inc.
Job No. 18504-303-012
Beazer South Cavalcade Site
Soil Washing with Incineration of Residuals Cost Estimate
By: BH/MB Date: December 1995

Item	Activity Description	Unit	Quantity	Unit Cost	Total $
1	Remedial Design	LS	1	$100,000.00	$100,000
2	RA Planning	LS	1	$30,000.00	$30,000
3	Site Preparation	LS		$50,000.00	$50,000
4	Mobilization	LS	1	$200,000.00	$200,000
5	Excavate Impacted Material	TON	6,300	$3.14	$19,801
6	Screening	TON	6,300	$35.00	$220,500
7	Soil Washing Equipment	DAY	100	$5,000.00	$500,000
8	Soil Washing Labor	DAY	100	$4,500.00	$450,000
9	Soil Washing Materials	LS	1	$253,500.00	$253,500
10	Soil Amendments	TON	2,655	$10.00	$26,550
11	+2.5 Transportation and Disposal*	TON	445	$1,000.00	$445,000
12	+0.5" Transportation and Disposal*	TON	820	$1,000.00	$820,000
13	+10 Mesh Transportation and Disposal*	TON	570	$1,000.00	$570,000
14	Decanted Froth Liquid-Transportation & Recycle	GAL	62,200	$1.50	$93,300
15	Froth-Transportation & Disposal*	TON	1,250	$1,000.00	$1,250,000
16	High Total Suspended Solids Wash Water Disposal	GAL	240,000	$0.50	$120,000
17	Backfill Clean Material	TON	6,300	$2.33	$14,696
18	Demobilization	LS	1	$150,000.00	$150,000
19	RA Oversight	DAY	100	$750.00	$75,000
20	Site Closure	LS	1	$15,000.00	$15,000
21	Closure Report	LS	1	$30,000.00	$30,000
	PROJECT SUBTOTAL				$5,433,349
	25% Contingency				$1,358,337
	TOTAL COST				$6,791,686

Item 5: Impacted Excavation based on $5.50/CY and 1.75 TON/CY
Item 18: Clean Backfill based on $3.50/CY and 1.5 TON/CY
Item 9: Soil Washing Materials Unit Cost is based on Pilot Test Chemical Use Data
Item 17: High TSS Wash Water Disposal is based on 5 gpm blowdown, for 8 hrs/day, for 100 days.
Items 4, 7, 8, and 19: Mobilization, Soil Washing Equipment and Labor Costs, and Demobilization is based on Contractor Bids
Item 14: Quantity based on 820 tons of dry divided by the 1.75 ton/cy factor. This 468 dry CY is multiplied by 2 to account for water resulting in 932 CY of wet froth sludge. If 1/3 of this is decanted as water, then 308 CY of Decanted Froth Liquid must be disposed. 308 CY=62,200 gallons @ $1.50/gallon.
Item 15: Following decanting of froth water as described in Item 14, 624 CY of wet froth sludge will remain. Multiplying by 2 ton/CY for wet material results in 1,250 tons.
*Items 11-13 and 15: For budgetary cost estimating purposes, incineration is considered as the disposal alternative due to the potential applicability of Phase IV Land Disposal Restrictions and Universal Treatment Standards. However, Beazer reserves the right to seek alternative remedial measures for treatment of soil washing residuals, if necessary.

Dames & Moore, Inc.
Job No. 18804-303-012
Beazer South Cavalcade Site
Soil Washing: Product Residual Stream Summary
By: BH/MB Date: November 1995

Product Stream	Estimated Tonnage	Stream Type
Feed	6300	Feed
+6" Debris	315	Residual
-6", +2.5" Debris	130	Residual
-2.5", +0.5" Aggregate	820	Residual
-0.5", +10 Mesh Aggregate	570	Residual
Floatation Tailings	3650	Washed
Floatation Froth	820 dry, 1640 wet	Residual
Wash Water	NA	Residual

012856

APPENDIX C - ADMINISTRATIVE ORDER ON CONSENT, DOCKET NUMBER CERCLA 6-08-92

012857

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
DALLAS, TEXAS

1992 JAN -8 PM 2:45

REGIONAL HEARING CLERK
EPA REGION 6

IN THE MATTER OF REX KING and MARILYN LEE KING, PALLETIZED TRUCKING, INC., BAPTIST FOUNDATION OF TEXAS, MERCHANTS FAST MOTOR LINES, INC., and TRUCKING PROPERTIES, INC., RESPONDENTS REGARDING THE SOUTH CAVALCADE STREET SUPERFUND SITE HOUSTON, HARRIS COUNTY, TEXAS Proceeding Under the Authority of Section 122(g)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as Amended, 42 U.S.C. § 9622(g)(4)	DOCKET NUMBER CERCLA 6-08-92 ADMINISTRATIVE ORDER ON CONSENT

I. JURISDICTION

1. This Administrative Order on Consent ("Consent Order") is issued and entered into pursuant to the authority vested in the President of the United States by Section 122(g)(4) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 ("CERCLA"), Pub. L. No. 99-499, 42 U.S.C. 9622(g)(4), to reach settlements in actions under Section 106 or 107(a) of CERCLA, 42 U.S.C. 9606 or 9607(a) in matters involving de minimis parties. The authority vested in the President has been delegated to the Administrator of EPA by Executive Order 12580, 52 FR 2923 (Jan. 29, 1987) and further delegated to the Regional Administrators of the EPA by EPA Delegation No. 14-14-E (Sept. 13, 1987).

2. This Consent Order is issued to and entered into by Trucking Properties, Inc. (successor by change of corporate name to Merchants, Inc.), a corporation organized under the laws of the State of Delaware; Merchants Fast Motor Lines, Inc. ("Merchants Fast"), a corporation organized under the laws of the State of Delaware; Baptist Foundation of Texas, a non-profit corporation organized under the Texas Non-Profit Corporation Act; and Mr. Rex King, Mrs. Marilyn Lee King, and Palletized Trucking, Inc., a corporation organized under the laws of the State of Texas ("Respondents").

3. The purposes of this Consent Order are to expedite payment into the Hazardous Substance Response Trust Fund pursuant to 42 U.S.C. § 9609(b)(2) of all of the response costs incurred by the government in remediation of the South Cavalcade Street Superfund Site ("Site") which have not already been recovered, preserve the government's right of access to the Site, provide notice to the public of the resolution of environmental matters at the Site, and recite the rights and responsibilities of the Parties hereto. The Parties agree to undertake all actions required by the terms and conditions of this Consent Order. The Respondents consent to and will not contest the U.S. Environmental Protection Agency's ("EPA") jurisdiction to issue this Consent Order and to implement or enforce its terms.

II. DEFINITIONS

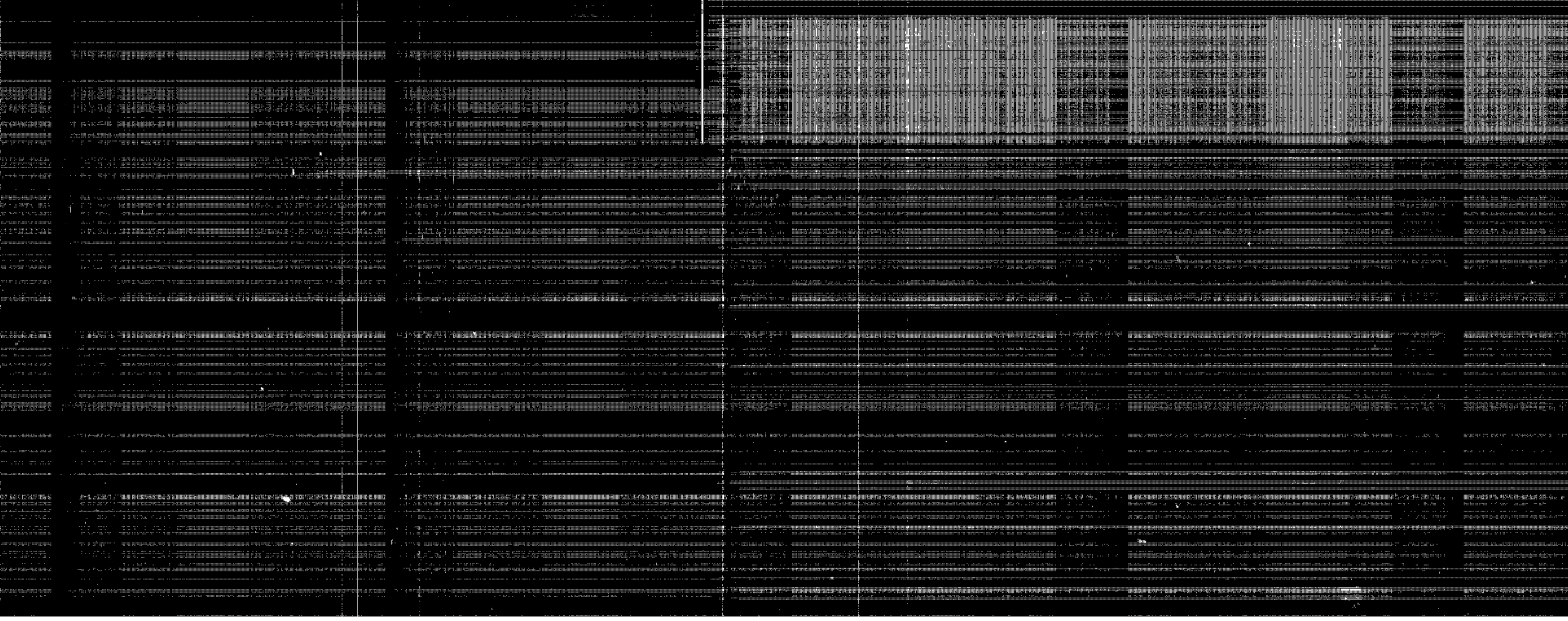
4. Unless otherwise expressly provided herein, terms used in this Consent Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in the statute or its implementing regulations. Whenever terms listed below are used in this Consent Order or in the documents attached to this Consent Order or incorporated by reference into this Consent Order or in schedules and deadlines established and approved pursuant to this Consent Order, the following definitions apply:

A. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (1986).

B. "Consent Decree" shall mean the agreement between Beazer East, Inc. and the United States of America (Civil Action No. H-90-2406) which was entered in the United States District Court for the Southern District of Texas on March 14, 1991, for the conduct of the Remedial Action described in the South Cavalcade Street site Record of Decision (ROD), Statement of Work (SOW), and other plans submitted pursuant to the requirements of the Consent Decree.

C. "Consent Order" shall mean this document and all attachments hereto and any further submittal(s) required pursuant to this Consent Order. Such further submittal(s) shall be incorporated into and become a part of this Consent Order upon final written approval by EPA of such submittal(s).

D. "Day" shall mean calendar day unless expressly stated to be a business day. "Business day" shall mean a day other than a Saturday, Sunday, or Federal holiday. In



computing any period of time under this Consent Order, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the end of the next business day.

E. "EPA" shall mean the United States Environmental Protection Agency.

F. "National Contingency Plan" or "NCP" shall mean the National Contingency Plan promulgated pursuant to § 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including any amendments thereto.

G. "Paragraph" shall mean a portion of this Consent Order identified by an arabic numeral.

H. "RCRA" shall mean the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 et seq.

I. "Record of Decision" or "ROD" shall mean the document signed by the EPA Region 6 Regional Administrator on September 26, 1988, which describes the Remedial Action to be conducted at the South Cavalcade Superfund Site.

J. "Respondents" shall mean Rex King and Marilyn Lee King, Palletized Trucking, Inc., Baptist Foundation of Texas, Merchants Fast Motor Lines, Inc., and Trucking Properties, Inc.

K. "Response Costs" shall mean all administrative, enforcement, investigative, remedial, and removal costs, direct or indirect, incurred pursuant to CERCLA, 42 U.S.C. § 9601 et seq.

L. "Section" shall mean a portion of this Consent Order identified by a Roman numeral and including one or more paragraphs.

M. "Site" shall mean the South Cavalcade Street Superfund Site encompassing approximately sixty-six (66) acres located in northeast Houston, Texas approximately one mile southwest of the intersection of Interstate Loop 610 and U.S. Route 59. The Site boundaries are Cavalcade Street to the north, Collingsworth Street to the south, and the Missouri and Pacific Railroad lines to the east and west. The legal description of the site is provided in Appendix B of the Consent Decree between EPA and Beazer East, Inc.

N. "State" shall mean the State of Texas.

O. "Statement of Work" or "SOW" shall mean Appendix C of the Consent Decree between EPA and Beazer East, Inc.

P. "TWC" shall mean the Texas Water Commission.

Q. "Underground Storage Tank" or "UST" shall be used as that term is defined in 40 C.F.R. § 280.12.

R. "United States" shall mean the United States of America.

III. STATEMENT OF FACTS

5. National Lumber and Creosoting Company acquired legal title to the Site in 1910 and constructed and operated a wood treating and coal tar distillation facility. National Lumber and Creosoting Company was acquired in 1938 by the Wood Preserving Corporation, a subsidiary of Koppers Company. In 1940, the Wood Preserving Corporation became a part of Koppers Company. In 1944, Koppers Company was incorporated and became Koppers Company, Inc. and continued the use of the Site as a wood preserving and coal tar distillation facility until 1962.

6. In 1962, the Koppers Company, Inc. ceased operating the wood preserving and coal tar distillation facility, dismantled the facility, and sold the Site to Merchants Fast. Merchants Fast then sold the Site to Gene Whitehead later in 1962. Mr. Whitehead subdivided the Site and sold 24.525 acres of the Site to Merchants Fast on January 1, 1965, and another 8.565 acres of the Site to Merchants Fast on March 25, 1965. Mr. Whitehead sold another 22.5 acres of the Site to Transcon Lines ("Transcon") in 1969. Transcon subsequently sold this 22.5 acre tract of land to the Baptist Foundation of Texas in 1970. Mr. Whitehead also sold 10.346 acres of the Site to Collingsworth Properties, Inc. ("Collingsworth Properties") in 1973. Collingsworth Properties subsequently sold this 10.346 acre tract of land to Rex King and wife, Marilyn Lee King in 1977. Merchants Fast sold 33.104 acres of the Site to Merchants, Inc. (the predecessor by corporate name change to Trucking Properties, Inc.) on August 8, 1979.

7. The Site is presently owned by Trucking Properties, Inc., Baptist Foundation of Texas, and Rex King and wife, Marilyn Lee King. The southeastern portion of the Site is currently used by a commercial trucking company known as Palletized Trucking, Inc., which operates a terminal for trucking operations. The southwestern portion of the Site is a vacant trucking terminal facility which was formerly owned and operated by Merchants Fast Motor Lines, Inc. The northern portion of the Site is used by Northwest Transport Service, Inc. and contains a terminal for trucking operations. The central portion of the Site is not currently used.

8. Hazardous substances within the definition of CERCLA Section 101(14), 42 U.S.C. § 9601(14), have been or are threatened to be released into the environment at or from the Site. A description of the specific contaminants detected at the site is provided in the Record of Decision.

9. As a result of the release or threatened release of hazardous substances into the environment, EPA has undertaken response action at the Site under Section 104 of CERCLA, 42 U.S.C. 9604, and where necessary, will undertake response action in the future.

10. EPA proposed the Site to be added to the National Priorities List ("NPL") in October 1984, and the Site was formally added to the NPL on June 10, 1986.

11. The Koppers Company, Inc. began the Remedial Investigation and Feasibility Study ("RI/FS") in November of 1985. The Remedial Investigation included investigations into contamination in soils, ground water, surface water and sediments, and air. The Feasibility Study ("FS") evaluated several methods for remediating the Site, including containment and treatment technologies. The RI/FS was completed in August 1988 with the publishing of the Remedial Investigation and Feasibility Study Reports.

12. The FS evaluated several methods for remediating the Site and included a Public Health and Environmental Assessment ("PHEA") of the Site. After public comment on the proposed remediation, the Record of Decision (ROD) was completed and signed on September 26, 1988. The remedial action selected by EPA in the ROD included a combination of soil washing and in situ soil flushing for remediating contaminated soils and physical/chemical separation followed by filtration and activated carbon adsorption for remediating contaminated groundwater.

13. In performing this response action, EPA has incurred response costs at or in connection with the Site in the amount of $584,651.76.

14. Beazer East, Inc. ("Beazer") is the corporate successor to National Lumber and Creosoting Company, The Wood Preserving Corporation, and Koppers Company, Inc. Beazer has agreed to conduct and finance the entire remedial action at the Site and to pay $500,000 of EPA's past response costs as set forth in a Consent Decree, Civil Action No. H-90-2406, United States of America vs. Beazer East, Inc., entered in the United States District Court for the Southern District of Texas on March 14, 1991.

15. Respondents represent, and for the purposes of this Consent Order EPA affirms and finds, that (a) the $84,651.76 payment required to be made by Respondents pursuant to Paragraph 29

of this Consent Order involves only a minor portion of the response costs at the Site, and that, (b) with respect to the Respondents, the conditions set forth in CERCLA 122(g)(1)(A) are met.

16. Respondents represent, and for the purposes of this Consent Order EPA affirms and finds, that (a) Respondents' involvement with the Site is limited to purchasing all or a portion of the Site and operation or leasing for the operation of a trucking terminal at the site, (b) the amount of the hazardous substances contributed to the Site by the Respondents, if any, is minimal in comparison to other hazardous substances at the Site, and (c) the toxic or other hazardous effects of the substances contributed by the Respondents to the Site, if any, are minimal in comparison to other hazardous substances at the facility.

IV. DETERMINATIONS

Based upon the Statements of Fact set forth above and on the administrative record for this Site, EPA has determined that:

17. The Site as described in Section III of this Consent Order is a "facility" as that term is defined in Section 101(9) of CERCLA, 42 U.S.C 9601(9).

18. Respondents are "persons" as that term is defined in Section 101(21) of CERCLA, 42 U.S.C. 9601(21).

19. Respondents are "owners" of a facility within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. 9607(a)(1), and are "potentially responsible parties" within the meaning of Section 122(g)(1) of CERCLA, 42 U.S.C. 9622(g)(1).

20. The past, present, or future migration of hazardous substances from the Site constitutes an actual or threatened "release" as that term is defined in Section 101(22) of CERCLA, 42 U.S.C. 9601(22).

21. Prompt settlement with the Respondents is practicable and in the public interest within the meaning of Section 122(g)(1) of CERCLA, 42 U.S.C. 9622(g)(1).

22. This Consent Order involves at most only a minor portion of the response costs incurred and to be incurred at the Site pursuant to Section 122(g)(1) of CERCLA, 42 U.S.C. 9622(g)(1).

23. Respondents are eligible for a de minimis settlement pursuant to section 122(g)(1)(A) of CERCLA, 42 U.S.C. 9622(g)(1)(A).

V. ORDER

24. Based upon the administrative record for this Site and the Statement of Facts and Determinations set forth above, and in consideration of the promises and covenants set forth herein, it is hereby AGREED TO AND ORDERED:

VI. ACCESS AND NOTICE

25. Respondents hereby grant to EPA, its employees, representatives, contractors, agents, and all other persons performing response actions under EPA's oversight, a right of access to the Site for the purposes of monitoring the terms of this Consent Order and performing response actions at the Site. Nothing herein shall limit EPA's right of access under applicable law.

26. Within 60 days of the effective date of this Consent Order, Respondents shall file in the land records of Harris County a notice, approved by EPA, to subsequent purchasers of the land, that hazardous substances were disposed of and will continue to remain in both the soils and ground water at the Site. This notice shall indicate that the development of the Site for residential use is inappropriate due to the continuing presence of hazardous substances at the site. This notice shall also include a copy of this Consent Order and the Consent Decree between EPA and Beazer East, Inc. In addition, within 10 days of filing of such notice, Respondents shall provide documentation to EPA verifying that they have filed the required notice pursuant to this paragraph.

27. Nothing in this Consent Order shall in any manner restrict or limit the nature or scope of response actions which may be taken by EPA in fulfilling its responsibilities under federal law. Respondents recognize that the implementation of response actions at the Site may interfere with the use of their property. EPA, its employees, representatives, contractors, agents, and all other persons performing response actions under EPA's oversight shall use their best efforts not to unreasonably interfere with the operations of the Respondents or their tenants by any such entry and actions, and will use their best efforts to give the Respondents reasonable notice prior to such entry. Respondents agree to cooperate with EPA in the implementation of response actions at the Site and further agree not to interfere with such response actions.

VII. DUE CARE

28. Nothing in this Consent Order shall be construed to relieve Respondents of their duty to exercise due care with respect to hazardous substances at the Site or their duty to comply with all applicable laws and regulations. Such due care shall include, but not be limited to (a) preventing the installation of water wells on the Site except for the purpose of conducting

investigation, remediation, or other activities authorized by EPA, (b) preservation, protection, repair, and maintenance of concrete foundations, parking areas, and other paved areas currently existing and under which hazardous substances remain, and (c) compliance with applicable laws and regulations applicable to the installation, maintenance, operation, or closure of existing underground storage tanks ("UST") on the Site. Respondents shall provide notice to EPA concurrent with any required notice to the Texas Water Commission ("TWC") prior to closure of any UST on the Site. EPA will provide notice of and an opportunity to cure any violation of subparagraph 28(b) provided that such violation is not caused by the Respondents. This opportunity to cure shall not exceed 10 days, and stipulated penalties shall start accruing on the eleventh (11th) day following the date of notice of violation if the violation continues.

VIII. PAYMENT

29. Respondents shall pay the sum of $84,651.76 to the Hazardous Substance Response Trust Fund within 30 days of the effective date of this Consent Order.

30. The payment specified in Paragraph 29 shall be made by certified or cashier's check(s) payable to "EPA Hazardous Substance Superfund." Each check shall reference the site name, the name and address of the Respondents, and the EPA docket number for this action, and shall be sent to:

Regional Hearing Clerk (6C)
U.S. Environmental Protection Agency
Region 6
P.O. Box 360582M
Pittsburgh, Pennsylvania 15251

Respondents shall simultaneously send a copy of each check to those EPA representatives designated in Section XVI.

IX. CIVIL AND STIPULATED PENALTIES

31. For each failure by a Respondent to meet any requirement in this Consent Order, such Respondent shall pay stipulated penalties in the amount set forth below for each day, or part thereof, during which the violation continues:

Period of Failure to Comply	Penalty Per Violation Per Day
1st through 7th day	$ 5,000
8th through 14th day	$10,000
15th through 21st day	$15,000
22nd through 28th day	$20,000
29th day and beyond	$25,000

32. In addition to the penalties listed in paragraph 31 and any other remedies or sanctions available to EPA, a civil penalty of up to $25,000 per day may be assessed against a Respondent for each failure or refusal by such Respondent to comply with any term or condition of this Consent Order pursuant to Section 122(l) of CERCLA, 42 U.S.C. 9622(l).

33. Stipulated and civil penalties shall be paid by certified or cashier's check within 30 days of receipt of a demand letter for payment or within 30 days of final dispute resolution, whichever comes later.

34. Docket No. CERCLA 6-08-92 should be clearly typed on the check to ensure proper credit.

35. Each check for stipulated or civil penalties shall be made payable to the Hazardous Substance Superfund and sent to:

Regional Hearing Clerk (6C)
U.S. Environmental Protection Agency
Region 6
P.O. Box 360582M
Pittsburgh, Pennsylvania 15251

Respondents shall simultaneously send a copy of the check and a transmittal letter which includes a brief description of the violation to those representatives of EPA designated in Section XVI.

X. DISPUTE RESOLUTION

36. The parties shall use their best efforts to resolve all disputes or differences of opinion informally. If, however, the parties are unable to resolve such matters informally, then the position advanced by EPA shall be considered binding unless the Respondents invoke the dispute resolution provisions of this Section.

37. If Respondents disagree with EPA's assessment of stipulated penalties pursuant to Section IX of this Consent Order, respondents shall notify EPA in writing of their objections and the basis therefore within 7 calendar days of receipt of EPA's demand for payment. Said notice shall set forth the specific points of the dispute and state the basis for the Respondents' position. Within 10 days of EPA's receipt of such written notice, EPA shall provide to Respondents its decision on the pending dispute.

38. EPA's decision pursuant to paragraph 37 shall be binding upon all parties to this Consent Order, unless Respondents, within 7 days, notify EPA in writing of their continued objections and request the Hazardous Waste Management Division Director for Region 6 to convene an informal conference for the purpose of discussing

Respondents' objections and the reasons for EPA's determination. The Hazardous Waste Management Division Director shall issue a written decision within 10 days from the date of the informal conference.

39. Except as set forth below, in any dispute, Respondents shall have the burden of showing that EPA's position, including without limitation any interpretation of the terms and conditions of this Consent Order and of applicable federal and state law and regulations, was arbitrary and capricious or otherwise not in acccrdance with law.

40. The existence of a dispute as defined herein, and EPA's consideration of such matters as placed into dispute shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Consent Order. During the pendency of the dispute resolution process, stipulated penalties with respect to the disputed issue shall accrue, but payment of stipulated penalties shall be stayed pending resolution of the dispute. Stipulated penalties shall be calculated for each day of non-compliance with this Consent Order beginning with the first day of non-compliance and including the period during which the Dispute Resolution procedures were on-going. If, however, the dispute is ultimately resolved in Respondents' favor, no stipulated penalties shall be due.

41. Notwithstanding any other provisions of the Consent Order, no action or decision by EPA, including without limitation, decisions of the Regional Administrator of Region 6 (or his designee), pursuant to this Consent Order shall constitute final agency action giving rise to any rights to judicial review prior to EPA's initiation of judicial action to compel Respondents' compliance with the mandates of this Consent Order.

42. Unless otherwise specifically set forth herein, the failure to provide expressly for dispute resolution in any section of this Consent Order is not intended and shall not bar Respondents from invoking this Section as to any dispute arising under this Consent Order. However, no dispute resolution decisions issued pursuant to this Section shall be subject to this dispute resolution section.

XI. CERTIFICATION OF RESPONDENTS

43. The Respondents certify that to the best of their knowledge and belief they have provided to the United States all information currently in their possession and in the possession of their agents, officers, directors, employees, or contractors which relates in any way to the ownership, operation, generation, treatment, transportation, or disposal of hazardous substances at or in connection with the site.

XII. COVENANT NOT TO SUE

44. Subject to the reservation of rights in Section XIII of this Consent Order, upon payment of the amounts specified in Paragraph 29, Section VIII, of this Consent Order, EPA covenants not to sue or take any other civil or administrative action against the Respondents for any and all civil liability pursuant to Sections 106 or 107(a) of CERCLA, 42 U.S.C. 9606 or 9607(a), or Section 7003 of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6973, with regard to the Site.

45. In consideration of EPA's covenant not to sue in Paragraph 44, Section XII, of this Consent Order, the Respondents agree not to assert any claims or causes of action against the United States or its contractors or its employees or the Hazardous Substance Superfund arising out of expenses incurred or payments made pursuant to this Consent Order, or to seek any other costs, damages, or attorney's fees from the United States or its contractors or employees arising out of response activities at the Site.

XIII. RESERVATION OF RIGHTS

46. Nothing in this Consent Order is intended to be nor shall it be construed as a release or covenant not to sue any Respondent(s) for any claim or cause of action, administrative or judicial, at law or in equity, which the United States, including EPA, may have against any such Respondent(s) for:

(a) Any liability as a result of failure to comply with this Consent Order;

(b) Any liability as a result of failure to make the payments required by Paragraph 29, section VIII, of this Consent Order;

(c) Any liability as a result of any future failure to exercise due care with respect to hazardous substances at the Site;

(d) Any liability resulting from any future exacerbation by Respondents of the release or threat of release of hazardous substances from the Site;

(e) Any and all criminal liability; or

(f) Any matters not expressly included in the covenant not to sue set forth in this Consent Order.

47. Nothing in this Consent Order constitutes a covenant not to sue or to take action or otherwise limits the ability of the United States, including EPA, to seek or obtain further relief from the Respondents, and the covenant not to sue in Paragraph 44, Section XII, of this Consent Order may be modified or declared to

be null and void at the discretion of EPA, if information materially different from that specified in Section III is discovered which indicates that Respondents fail to meet any of the criteria specified in section 122(g)(1)(A) of CERCLA.

48. Except as otherwise expressly provided in Paragraph 44, Section XII, of this Consent Order, nothing in this Consent Order is intended as a release or covenant not to sue nor any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the United States, including EPA, may have against any person, firm, corporation or other entity not a signatory to this Consent Order.

49. EPA and Respondents agree that the actions undertaken by the Respondents in accordance with this Consent Order do not constitute an admission of any liability by the Respondents. The Respondents do not admit and retain the right to controvert in any subsequent proceedings, other than proceedings to implement or enforce this Consent Order, the validity of the Statement of Facts or Determinations contained in this Consent Order.

XIV. CONTRIBUTION PROTECTION

50. Subject to the reservation of rights in Section XIII, of this Consent Order, EPA agrees that by entering into and upon carrying out the terms of this Consent Order, Respondents will have resolved their liability to the United States for those matters set forth in the covenant not to sue, Paragraph 44, Section XII, as provided by section 122(g)(1) of CERCLA, 42 U.S.C. 9622(g)(5), and shall have satisfied their liability for those matters within the meaning of section 107(a) of CERCLA, 42 U.S.C. 9607(a) and are entitled to contribution protection under CERCLA Section 113(f)(2), 42 U.S.C. 9613(f)(2).

XV. PARTIES BOUND

51. This Consent Order shall apply to and be binding upon and inures to the benefit of the Respondents and their officers, directors, shareholders, employees, agents, affiliates, successors (including, but not limited to successors-in-title), heirs, and assigns. The signatories represent that they are fully authorized to enter into the terms and conditions of this Consent Order and to legally bind the Respondents. Notwithstanding the foregoing, Merchants Fast does not currently own or operate any portion of the Site, and, as a result, Merchants Fast has no current duties or obligations under Paragraphs 25, 26, 27, 28, 52, and 53 of this Consent Order, and Merchants Fast shall have no liability based solely on the failure of any other Respondent to fulfill its duties and obligations under such Paragraphs.

52. In the event that Respondents transfer title or possession of the Site, they shall notify the EPA at least 30 days

prior to any such transfer and shall continue to be bound by all of the terms and conditions of this Consent Order unless EPA agrees otherwise and modifies this Consent Order accordingly.

53. In the event that Respondents transfer title or possession of the Site, they shall provide any such transferee with a copy of this Consent Order together with a written notice stating that such transferee (a) is subject to all of the requirements of the Consent Order including, without limitation, the requirement to provide EPA continuing access to the property for the purposes of monitoring its environmental status, taking remedial action, implementing or enforcing the terms of this Consent Order, or otherwise discharging EPA's regulatory responsibilities, and (b) is required to exercise continuing due care, as described in Section VII, in avoiding future releases from the Site. In addition, in no event shall the conveyance of any interest in property that includes, or is a portion of, the Site release or otherwise affect the liability of the Respondents to comply with this Consent Order.

XVI. FORM OF NOTICE

54. All notices required to be given pursuant to this Consent Order shall be in writing, unless otherwise expressly authorized. Notices or submissions required by this Consent Order shall be deemed timely if deposited with the United States Postal Service or an equivalent delivery service on or before the due date. Response times under this Consent Order shall run from the date of receipt, unless otherwise specified. Documents, notices, and other correspondence to be submitted pursuant to this Consent Order shall be sent by certified mail, return receipt requested, express mail service, or some equivalent delivery service providing proof of delivery to the following addresses or to such other addresses as the Parties hereafter may designate in writing:

As to the Environmental Protection Agency

Mark Fite
Remedial Project Manager (6H-SC)
U.S. Environmental Protection Agency
1445 Ross Ave.
Dallas, Texas 75202-2733
Fax: (214) 655-6460

Marvin Benton
Assistant Regional Counsel (6C-WT)
U.S. Environmental Protection Agency
1445 Ross Ave.
Dallas, Texas 75202-2733
Fax: (214) 655-2182

XVIII. ATTORNEY GENERAL APPROVAL

56. The Attorney General or his designee has issued prior written approval of the settlement embodied in this Consent Order in accordance with Section 122(g)(4) of CERCLA.

XIX. EFFECTIVE DATE

57. The effective date of this Consent Order shall be the date upon which EPA issues written notice to the Respondents that the public comment period pursuant to Paragraph 55, Section XVII, of this Consent Order has closed and that comments received, if any, do not require modification of or EPA withdrawal from this Consent Order.

ADMINISTRATIVE ORDER ON CONSENT
SOUTH CAVALCADE STREET SUPERFUND SITE
DOCKET NO. CERCLA 6-08-92

IT IS SO AGREED AND ORDERED:

REX KING and MARILYN LEE KING
(for themselves and for
PALLETIZED TRUCKING, INC.)

By: _____ Date: 1/14/92
Mr. Rex King
Owner

By: _____ Date: 1-15-92
Mrs. Marilyn Lee King
Owner

BAPTIST FOUNDATION OF TEXAS

By: _____ Date: 1-30-92
Mr. Calvin Reeves
Vice President and
General Counsel

MERCHANTS FAST MOTOR LINES, INC.

By: _____ Date: 1-23-92
Mr. Gary Armstrong
President

TRUCKING PROPERTIES, INC.

By: _____ Date: 1/13/92
Mr. Robert Sternenberg
President

U.S. ENVIRONMENTAL PROTECTION AGENCY

By: _____ Date: 1-24-92
B. J. Wynne
Regional Administrator
Region 6